

Chapter 4: Description of Preferred Alternative, Impacts and Mitigation

This chapter details the development and environmental resource assessment of the Preferred Alternative for the East Side Highway. A description of the Preferred Alternative and its expected traffic operations are discussed. Environmental resource impacts of the Preferred Alternative are documented, as well as mitigation efforts and necessary permitting.

4.1 Description of Preferred Alternative

What is the Preferred Alternative?

The Preferred Alternative is a refined version of Alternative 127 and includes necessary design enhancements added after Alternative 127 was selected as the Preferred Alternative. Alternative 127 was selected as the Preferred Alternative as it minimizes impacts to wetlands, residential displacements, business displacements, utility infrastructure, and special waste sites, and has fewer noise receptors within 500 feet. In addition, Alternative 127 provides for the best opportunity to serve forecasted growth while minimizing impacts to the community and the environment. After the impacts of Alternative 127 were counted, it was necessary to make some changes to the design in order to address comments received from the public and PSG and more accurately show the proposed construction. None of the changes impacted the overall operations of the roadway and all of the modifications would have applied to the other alternatives considered in **Chapter 3**. None of the modifications would have impacted the selection of Alternative 127 as the outcome of the Alternatives Analysis. The following is a brief description of the changes, which are also shown in **Figure 4.1-1**:

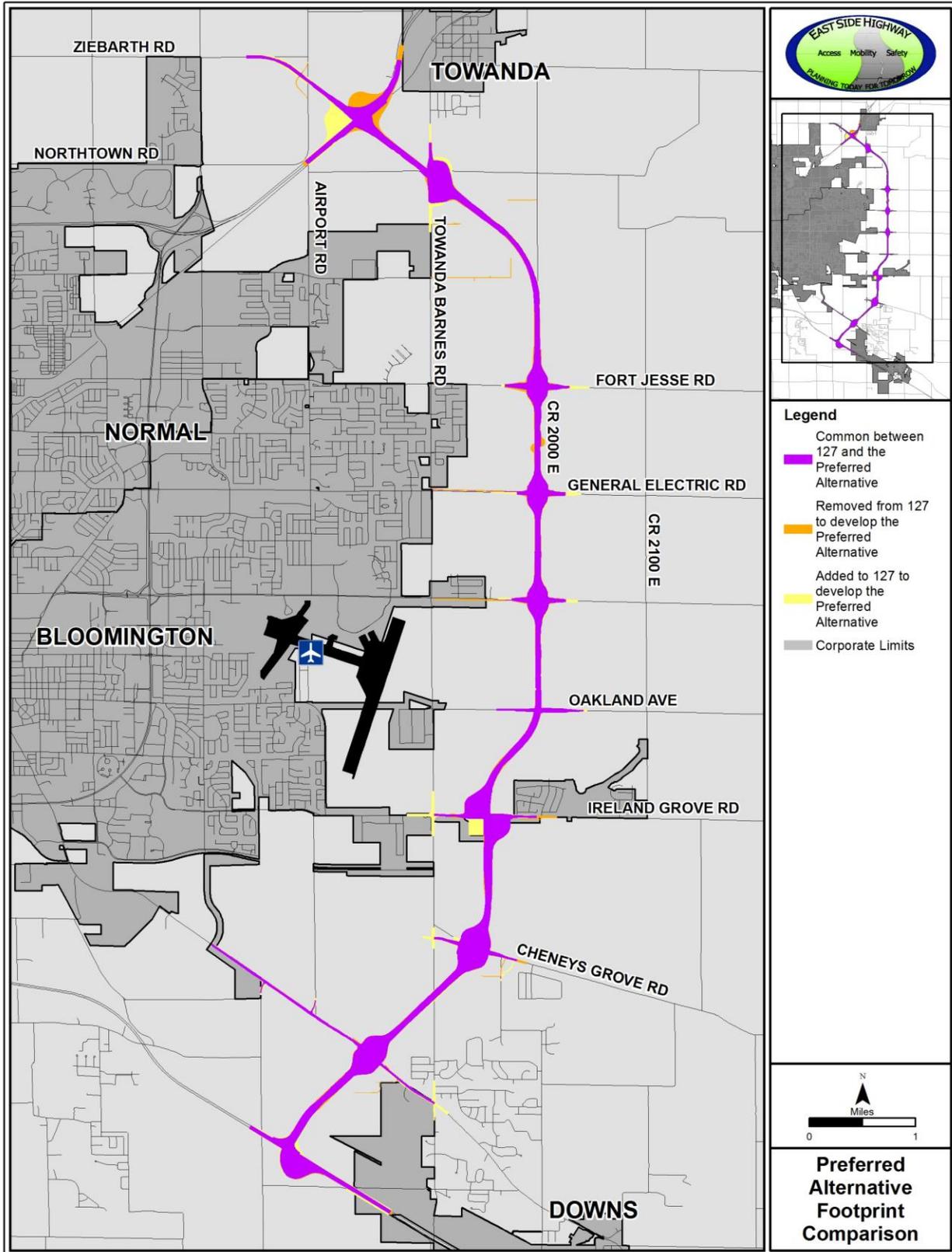
- The loop ramp in the northwest quadrant of the I-55 ESH interchange, which handled the northbound ESH to southbound I-55 traffic movement, was removed. This movement is now handled by a left turn to a ramp in the southwest quadrant.
- The northbound collector-distributor (CD) road was eliminated between Towanda Barnes Road and I-55 to accommodate the left turn movement mentioned above. The southbound CD road still remains.
- The southbound ESH to westbound I-74 entrance lane moved 100 feet west to flatten the grade where it matches with I-74.



- The westbound I-74 to northbound ESH exit lane shifted 1000 feet east to flatten the grade where it exits I-74.
- The drainage ditches along the main ESH roadway were modified based on more detailed calculations.
- The bike trail was relocated in places based on the ditch modifications.
- The farm pond created south of Ireland Grove by damming a tributary to Kickapoo Creek was eliminated by removing the dam. The stream channel for the tributary will be re-established and areas re-vegetated.
- The drainage culvert under Towanda Barnes Road was shortened due to the relocation of the bike trail.
- Farm access drives were modified based on the ditch modifications.
- Farm access drives were added to reduce the number of landlocked parcels and to reduce adverse travel for farm vehicles.
- The ESH mainline and cross road profiles were adjusted based on more detailed bridge depth calculations.



Figure 4.1-1: The Preferred Alternative Footprint Comparison



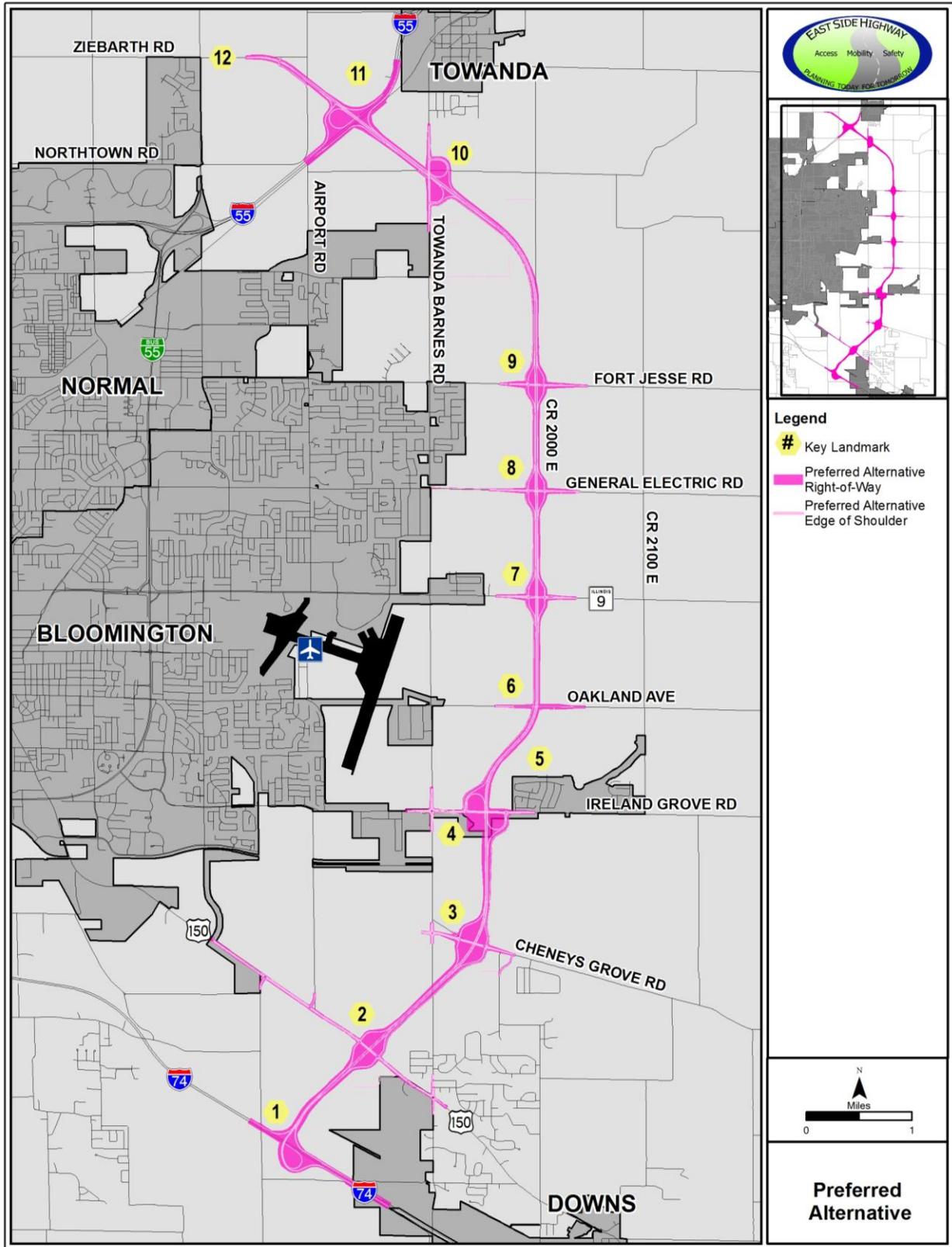
As a result of these modifications, the Preferred Alternative will no longer be referred to as “Alternative 127” and will be called the “Preferred Alternative,” throughout the remainder of this document. The Preferred Alternative is depicted in **Figure 4.1-2**. The impacts of the Preferred Alternative are described in this chapter and summarized in **Table 4.3-1**.

Figure 4.1-2 includes numbered landmarks to facilitate this description. The southern limit is a trumpet interchange at the intersection of I-74 and ESH **(1)**. From there, the alternative traverses to the northeast on new alignment providing local access to Morrissey Drive/U.S. Route 150 **(2)** and Cheney's Grove Road **(3)** via diamond interchanges. Continuing north, the Preferred Alternative intersects Ireland Grove Road via a partial cloverleaf interchange **(4)** and then veers northeast around The Grove subdivision **(5)** crossing under Oakland Avenue via a grade-separation **(6)**. The Preferred Alternative continues north along the alignment of the existing CR 2000 East Road intersecting Empire Street/Illinois Route 9 **(7)**, General Electric Road **(8)**, and Fort Jesse Road **(9)** via diamond interchanges at each location. The Preferred Alternative continues northwest connecting to Towanda Barnes Road **(10)** and I-55 **(11)** via partial cloverleaf interchanges at each with an interconnecting Collector-Distributor (C-D) roadway system between (See **Figure 4.1-11** for explanation of C-D roadway). The northern limit of the alternative is along E. Ziebarth Road northwest of I-55 **(12)** approximately 800 feet east of the existing intersection of Ziebarth and Pipeline Roads.

The proposed right-of-way for the Preferred Alternative varies in width (typically between 250-300 feet) and includes accommodations for the roadway itself, shoulders, drainage features, environmental buffers and pedestrian/bike facilities as described herein.



Figure 4.1-2: The Preferred Alternative



What will the Preferred Alternative look like?

Roadway Type

The Preferred Alternative will be a full access controlled freeway providing four travel lanes (two in each direction) with a 39-foot grass median (55 feet edge-to-edge). Exceptions to this include the mainline between the interchanges at Morrissey Drive/U.S.

Limited Access Freeway
 Direct access to the facility can only occur at interchanges. Private and commercial entrances along the roadway are prohibited.

Route 150 and I-74 and between Empire Street/IL Route 9 and Fort Jesse Road where a third lane is included for safe weaving maneuvers; and southbound between I-55 and Towanda Barnes Road, where a Collector-Distributor road (C-D) road is added for increased safety. See **Figure 4.1-12** for a depiction

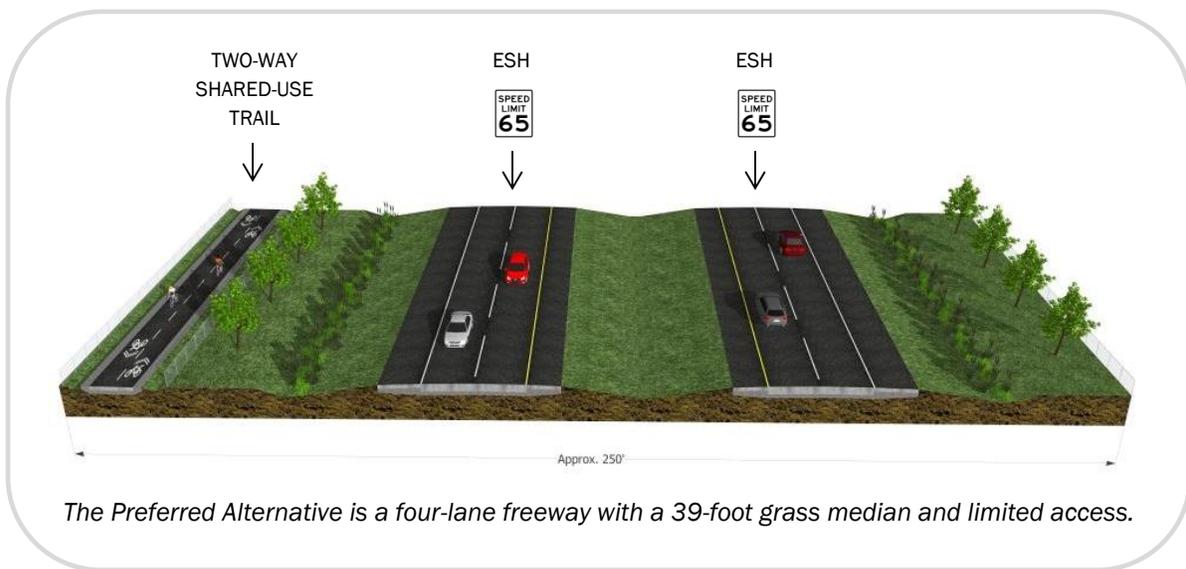
of a CD Road. Each of the travel lanes is 12 feet in width with a 10-foot paved shoulder along the outside lane and a 6-foot paved shoulder on the inside (median) lanes. A 10-foot shared-use path is provided to accommodate pedestrian and bicyclist traffic along the east side of the Preferred Alternative between Morrissey Drive/U.S. Route 150 and Ireland Grove Road and along the west side of the Preferred Alternative between Ireland Grove Road and the Towanda Barnes Road interchange.

Figure 4.1-3 depicts the typical cross section of the Preferred Alternative.

Speed Limit

The speed limit will be 65 miles per hour (mph) along the ESH Preferred Alternative.

Figure 4.1-3: Preferred Alternative Typical Cross Section



Interchanges

The location and type of interchanges were determined through meetings with the Community Working Group (CWG), Focus Working Groups (FWGs) and the Project Study Group (PSG). Increased mobility and access, projected traffic volumes, access control, safety and site topography were considered when selecting the interchange types and locations. Based on these factors, interchanges are proposed at the following locations:

- I-74 west of Downs: The Preferred Alternative joins I-74 west of Downs with a trumpet interchange at the southern project limits as shown in **Figure 4.1-4**. The interchange provides free flow access for all movements to and from I-74 and ESH. The southbound ESH to westbound I-74 movement and the eastbound I-74 to northbound ESH movement are accommodated by single lane ramps. The southbound ESH to eastbound I-74 movement and westbound I-74 to northbound ESH movement are accommodated by two lane ramps. On ESH north of the interchange, the ramps merge to form a three-lane freeway in each direction up to the interchange at Morrissey Drive/U.S. Route 150 to facilitate weaving movements between the interchanges. No bicycle or pedestrian accommodations will be made at this interchange. The Alternative Modes FWG indicated that bicyclists and pedestrians can use the existing roadway overpass at CR 1750 East to cross I-74.

Figure 4.1-4: Preferred Alternative Interchange with I-74



- Morrissey Drive/U.S. Route 150 between Towanda Barnes Road and CR N 1750 E Road: The Preferred Alternative provides a diamond interchange at Morrissey Drive/U.S. Route 150 northwest of Downs as shown in **Figure 4.1-5**. Morrissey Drive/U.S. Route 150 will be widened to a five-lane cross-section at the proposed interchange and will extend east to

Traffic Weaving

Weaving is the crossing of two or more traffic streams traveling in the same direction along a length of highway without the aid of traffic control devices.

Towanda Barnes Road and west to the McLean County planned extension of Hershey Road. Both ramp intersections with Morrissey Drive/U.S. Route 150 will be signalized and the traffic signals will be coordinated to operate as a single, offset intersection to reduce vehicle delay along Morrissey Drive/U.S. Route 150.

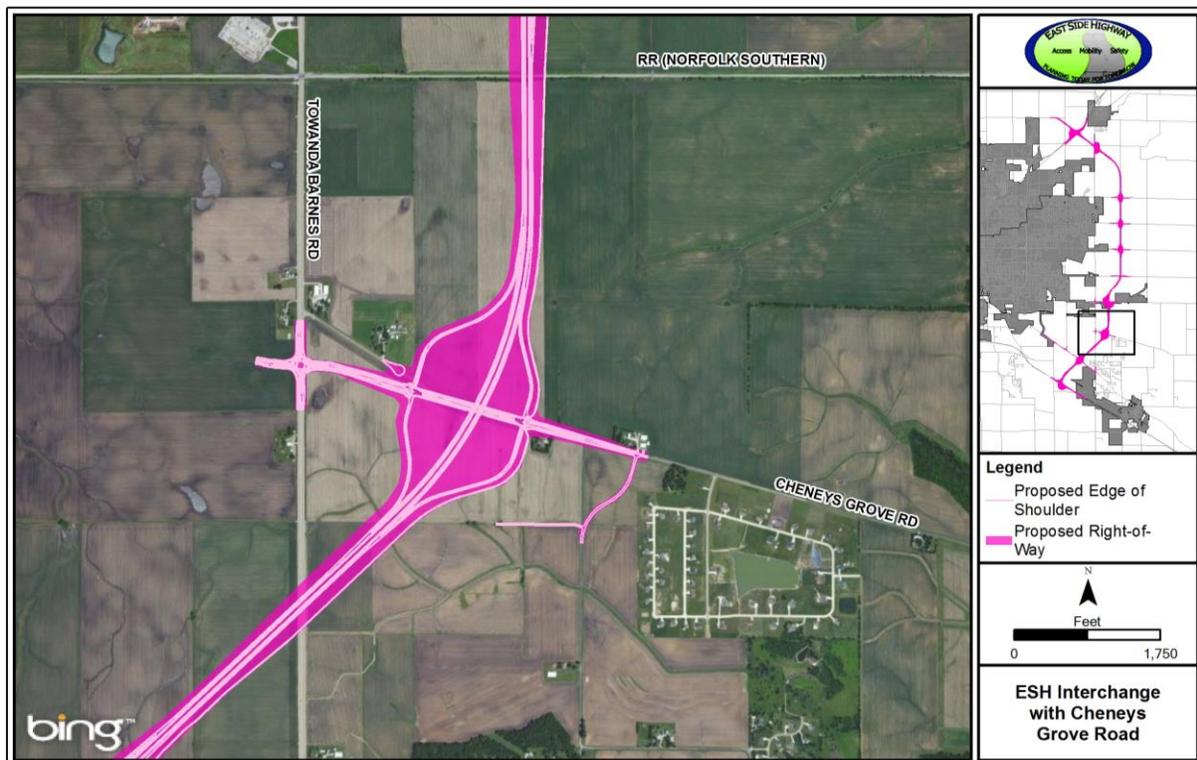
ESH south of the interchange will provide three lanes in each direction connecting with the interchange to the south at I-74 to accommodate traffic weaving movements between the interchanges. North of the proposed interchange, ESH will provide two lanes in each direction. Pedestrians will be accommodated along the Morrissey Drive/U.S. Route 150 through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge.

Figure 4.1-5: Preferred Alternative Interchange with Morrissey Drive/U.S Route 150



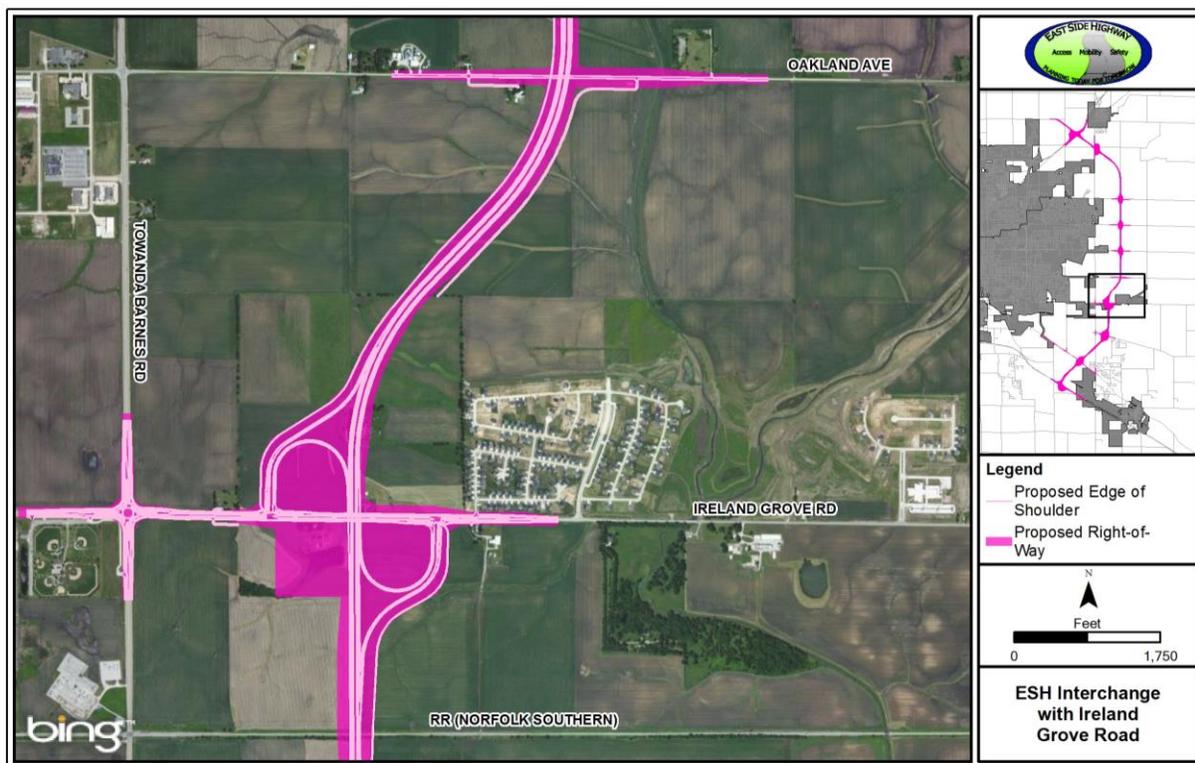
- Cheneys Grove Road east of Towanda Barnes Road: The Preferred Alternative provides a diamond interchange at Cheneys Grove Road east of Towanda Barnes Road and north of Downs as shown in **Figure 4.1-6**. Cheneys Grove Road will be widened to a five-lane cross-section at the proposed interchange and will extend west to Towanda Barnes Road where there is a McLean County planned realignment of Cheneys Grove Road to connect with the Hamilton Road extension west of Towanda Barnes Road. Both ramps exiting the freeway at the intersection with Cheneys Grove Road will be stop controlled. Pedestrians will be accommodated along Cheneys Grove Road through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge.

Figure 4.1-6: Preferred Alternative Interchange with Cheneys Grove Road



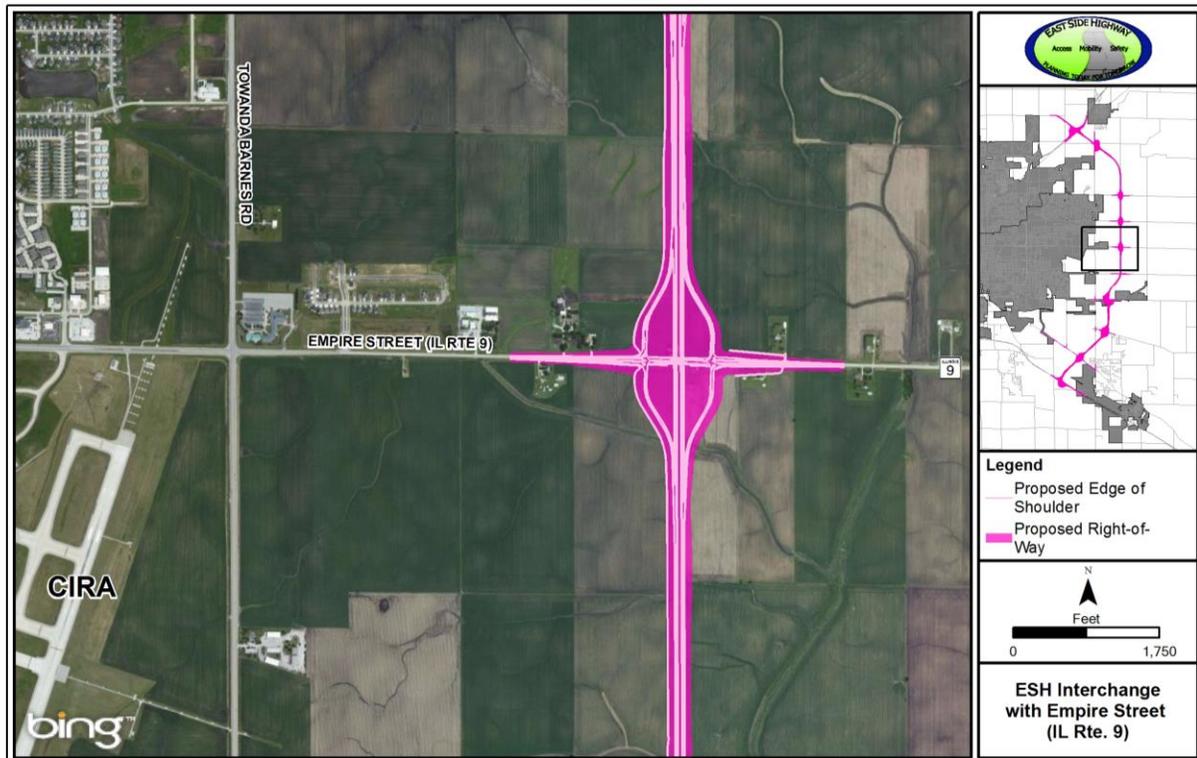
- Ireland Grove Road east of Towanda Barnes Road: The Preferred Alternative provides a partial cloverleaf interchange at Ireland Grove Road east of Towanda Barnes Road as shown in **Figure 4.1-7**. Ireland Grove Road will be widened to a five-lane cross section at the proposed interchange and will extend west to Towanda Barnes Road where there is an existing five-lane cross section. Both ramp intersections with Ireland Grove Road will be signalized and the traffic signals will be coordinated to operate as a single, offset intersection to reduce vehicle delay along Ireland Grove Road. The partial cloverleaf arrangement including ramps only in the northwest and southeast quadrants is designed to minimize impacts to the existing and projected residential development in The Grove subdivision. Pedestrians will be accommodated along the Ireland Grove Road through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge.

Figure 4.1-7: Preferred Alternative Interchange with Ireland Grove Road



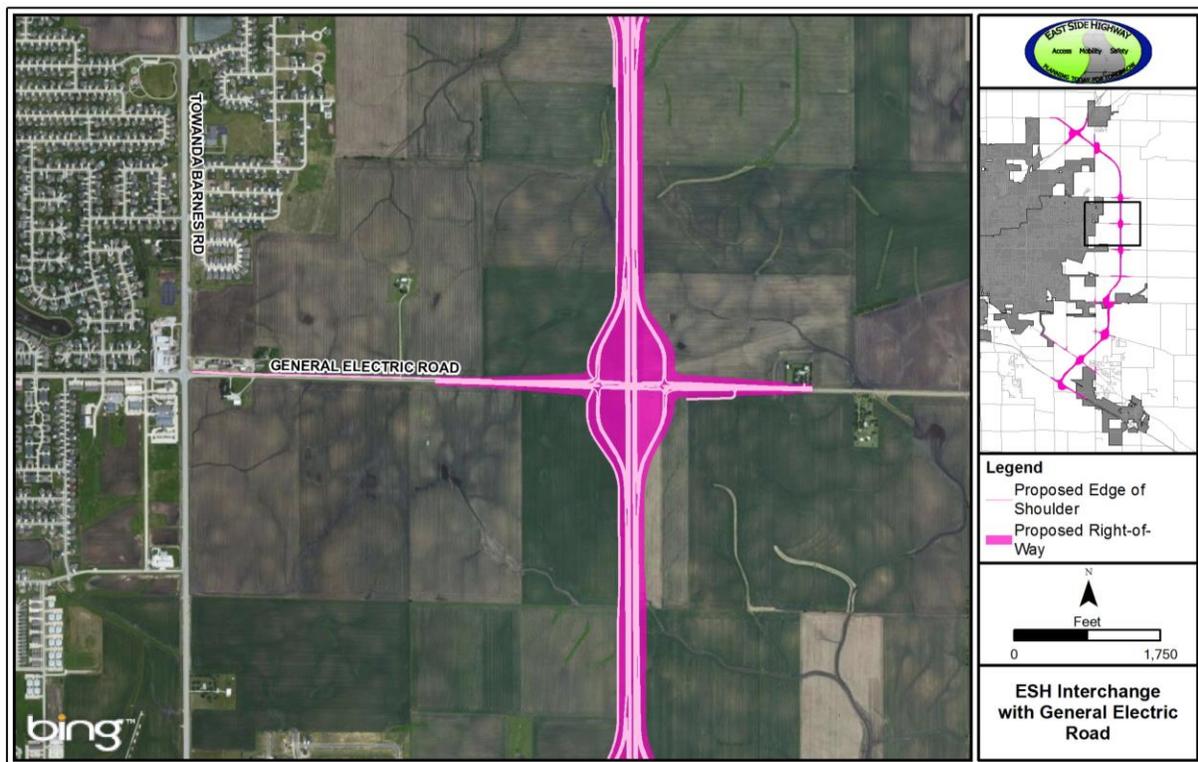
- Empire Street/IL Route 9 east of Towanda Barnes Road: The Preferred Alternative provides a diamond interchange at Empire Street/IL Route 9 east of Towanda Barnes Road as shown in **Figure 4.1-8**. Empire Street will be widened to a five-lane cross section at the proposed interchange and will be signalized at the two ramps exiting from the proposed freeway. The traffic signals will be coordinated to operate as a single, offset intersection to reduce vehicle delay along Empire Street. ESH north of the interchange provides three lanes in each direction with the outside lane acting as an auxiliary lane to accommodate vehicle weaving movements between the Empire Street and General Electric Road interchanges. Pedestrians will be accommodated along Empire Street/IL Route 9 through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge.

Figure 4.1-8: Preferred Alternative Interchange with Empire Street/IL Route 9



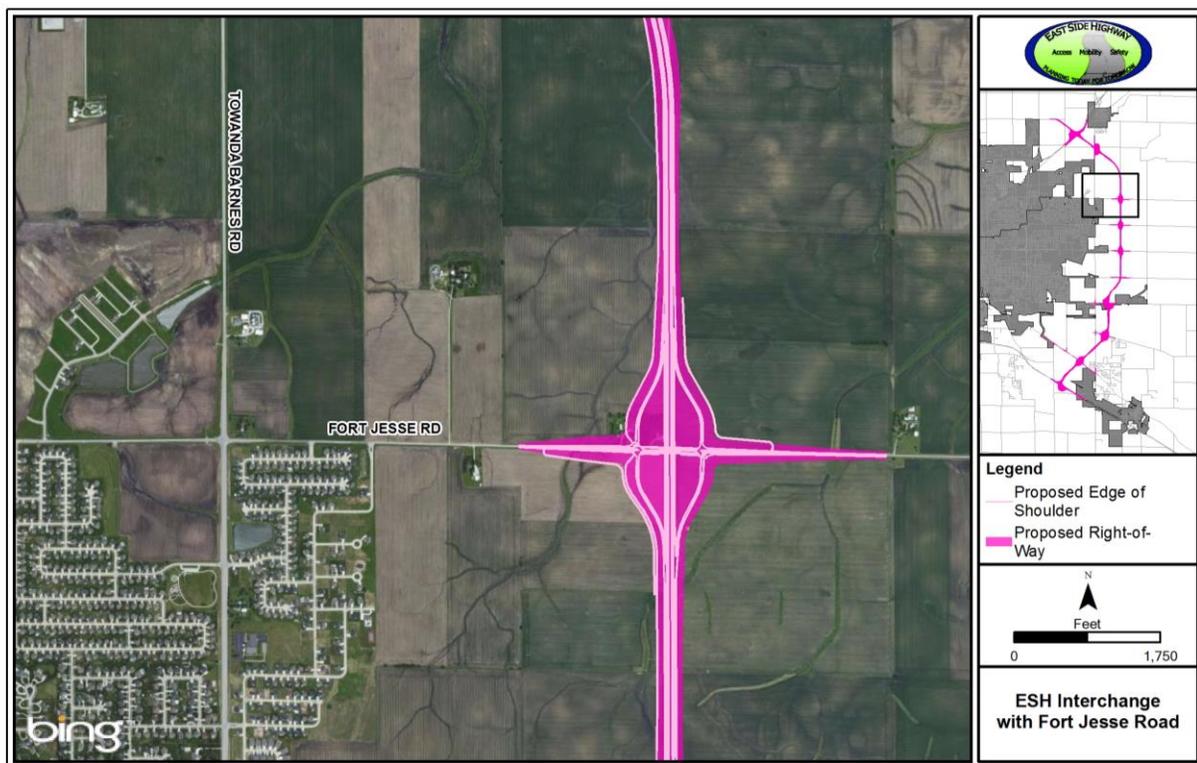
- General Electric Road east of Towanda Barnes Road: The Preferred Alternative provides a diamond interchange at General Electric Road east of Towanda Barnes Road as shown in **Figure 4.1-9**. General Electric Road will be widened to a five-lane cross section at the proposed interchange and will be reduced down to two lanes beyond the interchange to match the existing roadway. The two ramps exiting from the proposed freeway will be stop controlled at General Electric Road. ESH north and south of the interchange provides three lanes in each direction with the outside lane acting as an auxiliary lane to accommodate vehicle weaving movements between the General Electric Road and Empire Street interchange to the south and Fort Jesse Road interchange to the north. Pedestrians will be accommodated along General Electric Road through the inclusion of off street facilities (sidewalk/bike paths) that utilize a wider bridge and connect to the existing Constitution Trail along General Electric Road.

Figure 4.1-9: Preferred Alternative Interchange with General Electric Road



- Fort Jesse Road east of Towanda Barnes Road: The Preferred Alternative provides a diamond interchange at Fort Jesse Road east of Towanda Barnes Road as shown in **Figure 4.1-10**. Fort Jesse Road will be widened to a five-lane cross section at the proposed interchange and will be reduced down to two lanes beyond the interchange to match the existing roadway. The two ramps exiting from the proposed freeway will be stop controlled at Fort Jesse Road. ESH south of the interchange provides three lanes in each direction with the outside lane acting as an auxiliary lane to accommodate vehicle weaving movements between the Fort Jesse Road and General Electric Road interchanges. North of the interchange ESH returns to two lanes in each direction. Pedestrians will be accommodated along Fort Jesse Road through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge.

Figure 4.1-10: Preferred Alternative Interchange with Fort Jesse Road



- Towanda Barnes Road south of Towanda and I-55 southwest of Towanda: The Preferred Alternative provides full access to and from I-55 and Towanda Barnes Road with partial cloverleaf interchanges at each location as shown in **Figure 4.1-11**. As a result of their close proximity to each other, the two access locations operate as a single interchange that accommodates all movements with fewer ramps. At the interchange of ESH and I-55, access is provided for all movements to and from I-55 and ESH with the exception of the southbound ESH to northbound I-55 and northbound I-55 to northbound ESH movements. It was determined that due to the anticipated low traffic volumes and the availability of adjacent interchanges on I-55 to provide for the movements (i.e. Veterans Parkway and Towanda), that these two movements would be accommodated at the ESH/Towanda Barnes Road interchange. Vehicles wishing to make these movements will be directed to the adjacent interchange at Towanda Barnes Road and guided through the ramps to complete their trips. Full access is provided at Towanda Barnes Road for all movements via traffic signals at the ramp intersections. Appropriate additional signing and pavement markings will be provided in order to clearly identify the interchange movements and exits.

Pedestrians will be accommodated along Towanda Barnes Road through the inclusion of off street facilities (sidewalk/bike paths) and a wider bridge. No pedestrian accommodations are made at the ESH at I-55 interchange as part of this project. A future pedestrian/bike crossing of I-55 may be considered as part of a separate project.

Figure 4.1-11: Preferred Alternative Interchange with I-55 and with Towanda Barnes Road

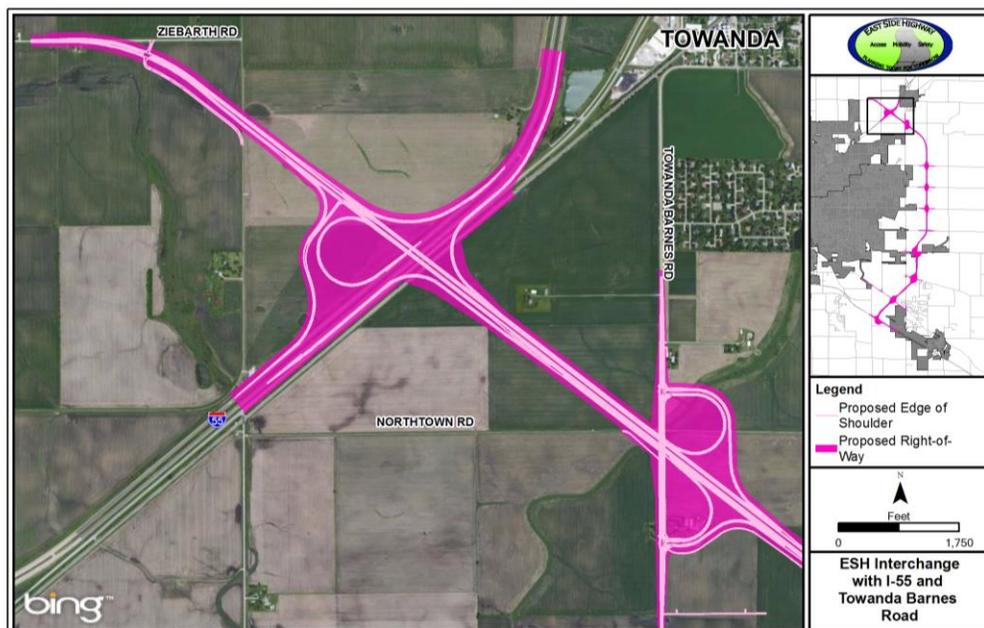
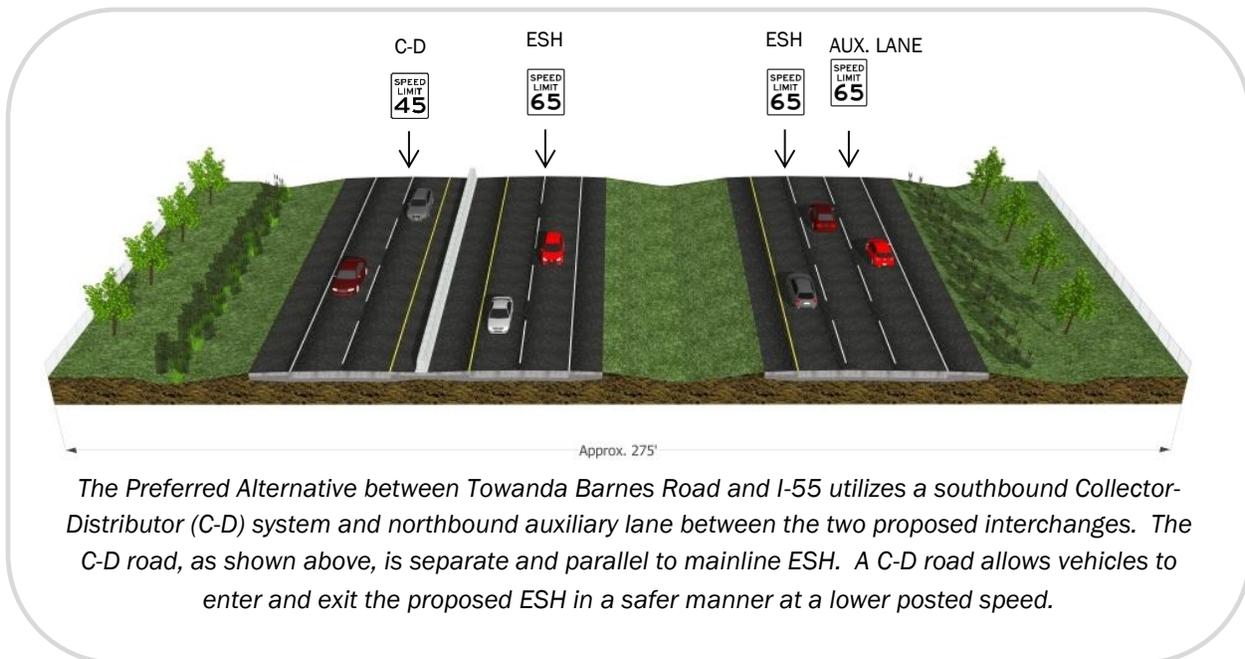


Figure 4.1-12: Preferred Alternative Typical Cross Section with C-D Lanes

Access to Cross Roads

All of the existing cross roads will remain open with the exception of CR N 2000 East Road which will be closed since the Preferred Alternative follows the existing roadway right-of-way. Towanda Barnes Road at the northern project limits, Fort Jesse Road, General Electric Road, Empire Street/IL Route 9, CR 1300 North (Oakland Avenue), Ireland Grove Road and Cheneys Grove Road bridge over the ESH. The ESH will bridge over Towanda Barnes Road at the southern project limits and Morrissey Drive/U.S. Route 150.

How is access to residential and farm properties impacted?

Residential Access

With the exception of brief periods during construction activities, access to all residential properties will be maintained; however, residential driveways cannot be located within 350-500 feet of an interchange ramp terminal depending on the type of interchange. If an existing driveway has access to the cross roads within these limits, the driveway will be relocated. If relocation within the existing parcel is not possible, the property will be displaced. At locations where a raised concrete median is proposed on the cross roads, driveway or side road access is restricted to right-in/right-out only at those locations. This will result in adverse travel for vehicles desiring to turn left from these properties. They will need to travel to the nearest intersection to turn around.



Farm Access

Farm access to each property not acquired by the proposed project will be maintained. At locations where access to the farm parcel is impacted by the Preferred Alternative, a new driveway or frontage road will be provided to the parcel where feasible. If a new driveway cannot be provided, the farm parcel has been included as a full acquisition (displacement).

What additional improvements are needed as a result of the Preferred Alternative?

Though most of the existing roadway network in the study area will experience capacity and safety benefits as a result of the Preferred Alternative, improvement to some of the existing roadway network is necessary to accommodate the Preferred Alternative. These improvements are:

Planned and Programmed Improvements

Planned and programmed improvements include all improvements for the local and regional area from the *Long Range Transportation Plan 2035 for the Bloomington-Normal Urbanized Area (2007 LRTP)*, *Bloomington-Normal Bicycle Pedestrian Plan (1997 BPP)*, *Transportation Improvement Program – Fiscal Years 2011-2015 (2010 TIP)* and any other local planning documents. It is assumed that all planned and program projects and improvements will be completed and operating within the McLean County transportation system prior to the design year (2035) for this project.

- Morrissey Drive/U.S. Route 150 will be widened to a five-lane cross-section from the Hershey Road extension to Towanda Barnes Road with a center bidirectional left-turn lane. The Hershey Road extension is a planned and programmed improvement by local transportation officials and is not required as a part of the Preferred Alternative.
- The intersection of Morrissey Drive/U.S. Route 150 and Towanda Barnes Road will be improved to provide one through lane and exclusive right-turn and left-turn lanes on all approaches.
- Cheney's Grove Road will be widened to a five-lane cross section from Towanda Barnes Road to the ESH interchange. This cross section will allow for two travel lanes in each direction and will provide for left turn channelization. East of the interchange, Cheney's Grove Road will reduce down to two lanes to match the existing road.
- The Towanda Barnes Road and Cheney's Grove Road intersection will be improved to provide exclusive left-turn lane and right-turn lanes and two through lanes on all approaches.
- The Towanda Barnes Road and Ireland Grove Road intersection will be improved to provide dual left-turn lanes, exclusive right-turn lanes and two through lanes on all approaches.



- Ireland Grove Road will be widened to a five-lane cross section from the existing five-lane cross section at Towanda Barnes Road east past Kell Avenue where it tapers to the existing 3-lane roadway.
- Oakland Avenue (CR 1300 North Road) will be raised above existing grade to go over ESH.
- General Electric Road will be widened to a five-lane cross section through limits of the proposed interchange with ESH. Beyond the interchange, General Electric Road will be reduced to two lanes to match the existing road.
- Fort Jesse Road will be widened to a five-lane cross section through limits of the proposed interchange with ESH. Beyond the interchange, Fort Jesse Road will be reduced to two lanes to match the existing road.

What storm water Best Management Practices (BMPs) are included in the Preferred Alternative?

The Preferred Alternative will incorporate standard drainage features to convey storm water runoff including culvert crossings and ditches. These storm water management features have been designed in accordance with IDOT and local storm water policies; however, the opportunity exists to include additional treatment options to potentially reduce runoff impacts to adjacent properties and waterways. The locations of potential proposed storm water treatment BMP options are discussed in more detail in **Section 4.3.7** and depicted in **Figure 4.3.7-3**.

How are bicyclists and pedestrians accommodated?

Bicyclists and pedestrians will be accommodated with the ESH Preferred Alternative by means of a paved 10-foot shared-use trail throughout most of the Preferred Alternative alignment. The trail will run parallel to ESH between Morrissey Drive/U.S. Route 150 and Ireland Grove Road on the east side. From Ireland Grove Road the shared-use path will be provided on the west side and parallel to ESH north to 1800 North Road at which point the trail follows the existing local roadway network to join the U.S. Route 66 trail built by others. The proposed trail system is displayed in **Figures 4.1-13** and **4.1-14**.

Connections to local trails and planned trails will be provided under the Preferred Alternative by creating crossings and extensions at various locations in the study area as follows:

- On General Electric Road the existing Constitution Trail will be extended east from Towanda Barnes Road to ESH.



- At Towanda Barnes Road a trail extension will be provided to extend from the locally-planned Towanda Barnes trail's northern terminus to the proposed trail parallel to ESH. At the northern study limits the proposed trail will end in a connection to the U.S. Route 66 trail.
- Structures that cross over ESH will be wide enough to accommodate bicyclists and pedestrians. Locations include Cheneys Grove Road, Ireland Grove Road, Empire Street/IL Route 9, General Electric Road, and Fort Jesse Road.
- In addition to the structure accommodations, off street bike and pedestrian accommodations will also be provided along the cross roads where improvements are being made. These cross roads include Morrissey Drive/U.S. Route 150, Cheneys Grove Road, Ireland Grove Road, Empire Street/IL Route 9, General Electric Road, and Fort Jesse Road.

Bicycle and pedestrian access across the ESH is needed to connect neighborhoods and provide continuity of the trail system. Public and the local officials expressed interest in additional crossings of the ESH between interchanges for connectivity to existing and planned growth areas. These crossings also serve to reduce the barrier effect of the ESH. One of these trail crossings will be included near the Eagle View subdivision, between General Electric Road and Fort Jesse Road.

Consistent with the construction of future locally-planned trails, the ESH will be constructed to provide an underpass culvert crossing at a drainageway south of 1300 N Road and an underpass along the Norfolk Southern railroad tracks south of Ireland Grove Road.

The proposed ESH trail system will include at-grade street crossings within interchange areas. Traffic controls at these crossings may include pedestrian signals, warning signs, and other indicators.



Figure 4.1-13: Preferred Alternative Proposed Trail System – South Study Area Limits

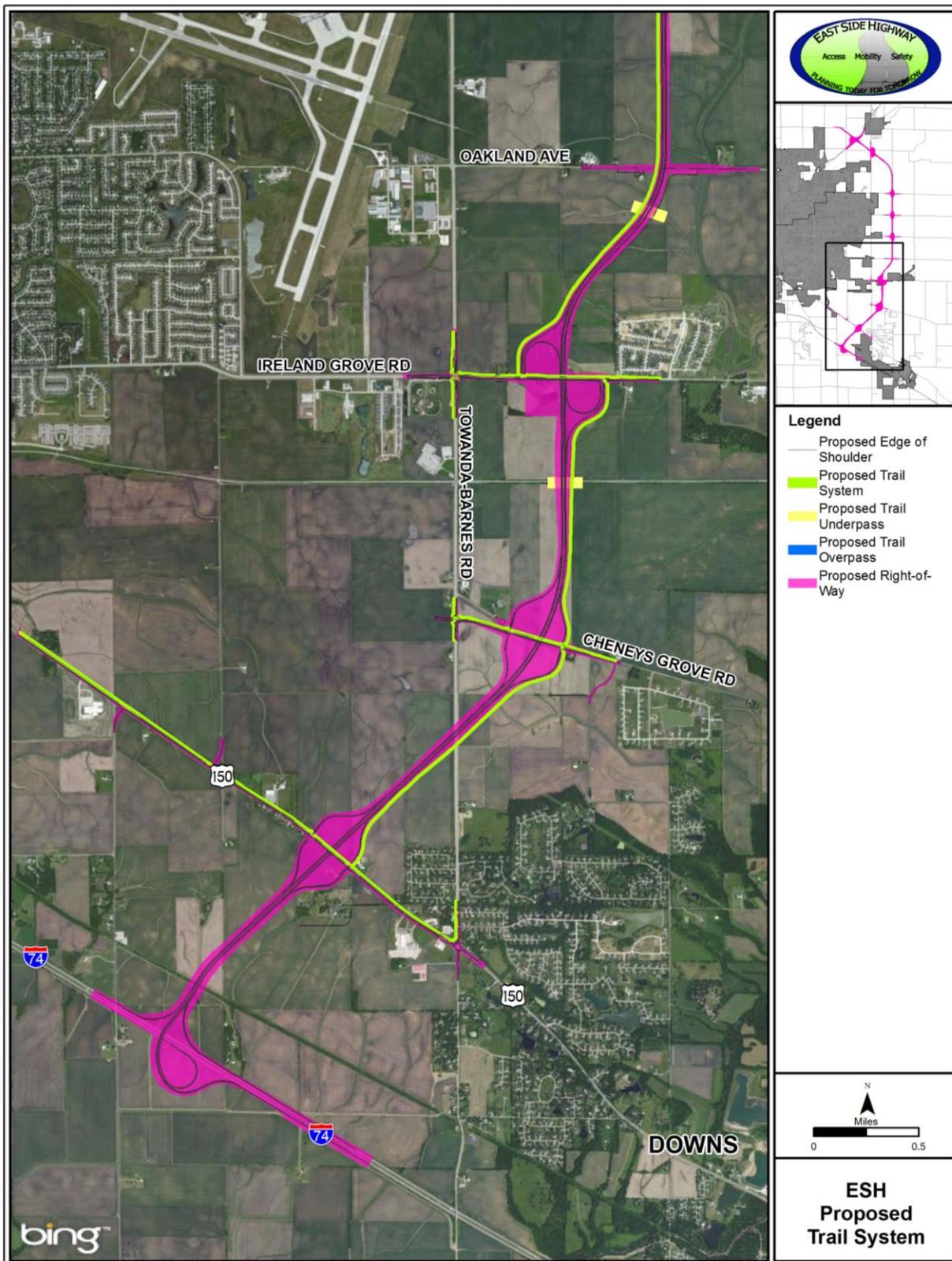
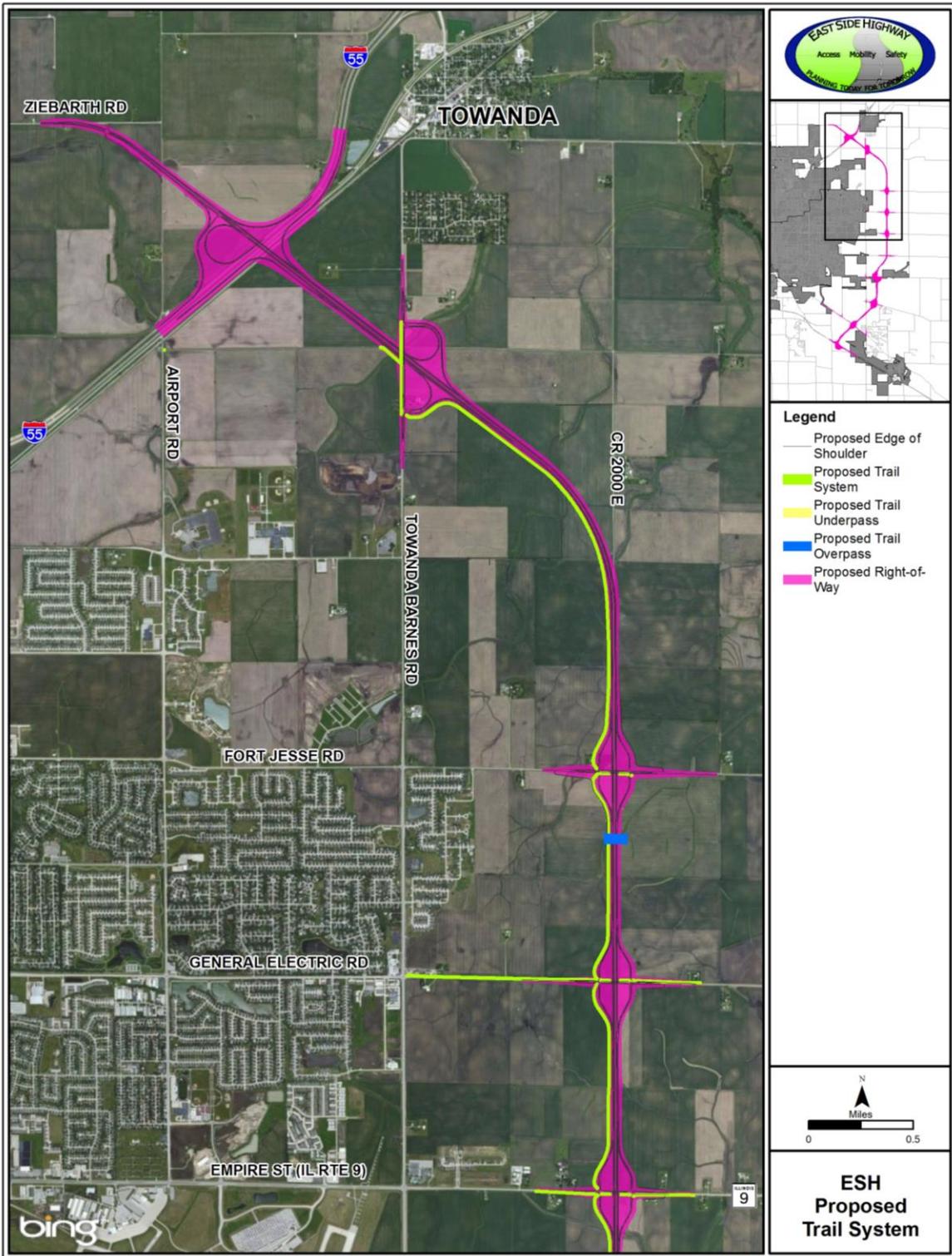


Figure 4.1-14: Preferred Alternative Proposed Trail System – North Study Area Limits



4.2 Operations of the Preferred Alternative

What are the anticipated 2035 Preferred Alternative traffic volumes and how will mobility be affected by the Preferred Alternative?

The ESH Preferred Alternative traffic volumes were developed using a Travel Demand Model (TDM) based on 2035 No Build conditions with the addition of the ESH. A graphical depiction of the projected 2035 ESH Preferred Alternative Average Annual Daily Traffic (AADT) can be seen in **Figure 4.2-1**.

The major north-south roadway on the east side of Bloomington-Normal is Towanda Barnes Road. It is expected to be over capacity by 2035 if no improvements other than those identified in the *LRTP 2035* and IDOT's planned and programmed improvement list are implemented.

The proposed ESH is expected to alleviate demand on Towanda Barnes Road by over 20 percent thus reducing congestion and increasing mobility within the corridor. Increases in traffic volumes on several major east-west corridors on the east side of Bloomington-Normal are anticipated in locations such as Fort Jesse Road, General Electric Road, and Empire Road. These increases are expected to be minimal, with the average volumes increasing by less than six percent. The results have relatively insignificant increases to the v/c ratio, mobility, and congestion on the networks. Capacity improvements as a result of the ESH were accounted for in the design of the Preferred Alternative. The greatest benefit to congestion and mobility is noted on Morrissey Drive/U.S. 150 and at the roads that access the two existing interchanges of I-74 in Downs and I-55 in Towanda where volumes decrease by almost 50 percent. **Tables 4.2-1** and **4.2-2** compare the projected 2035 No Build and Preferred Alternative traffic volumes and v/c ratio, respectively, in the study area.



Figure 4.2-1: 2035 Preferred Alternative AADT

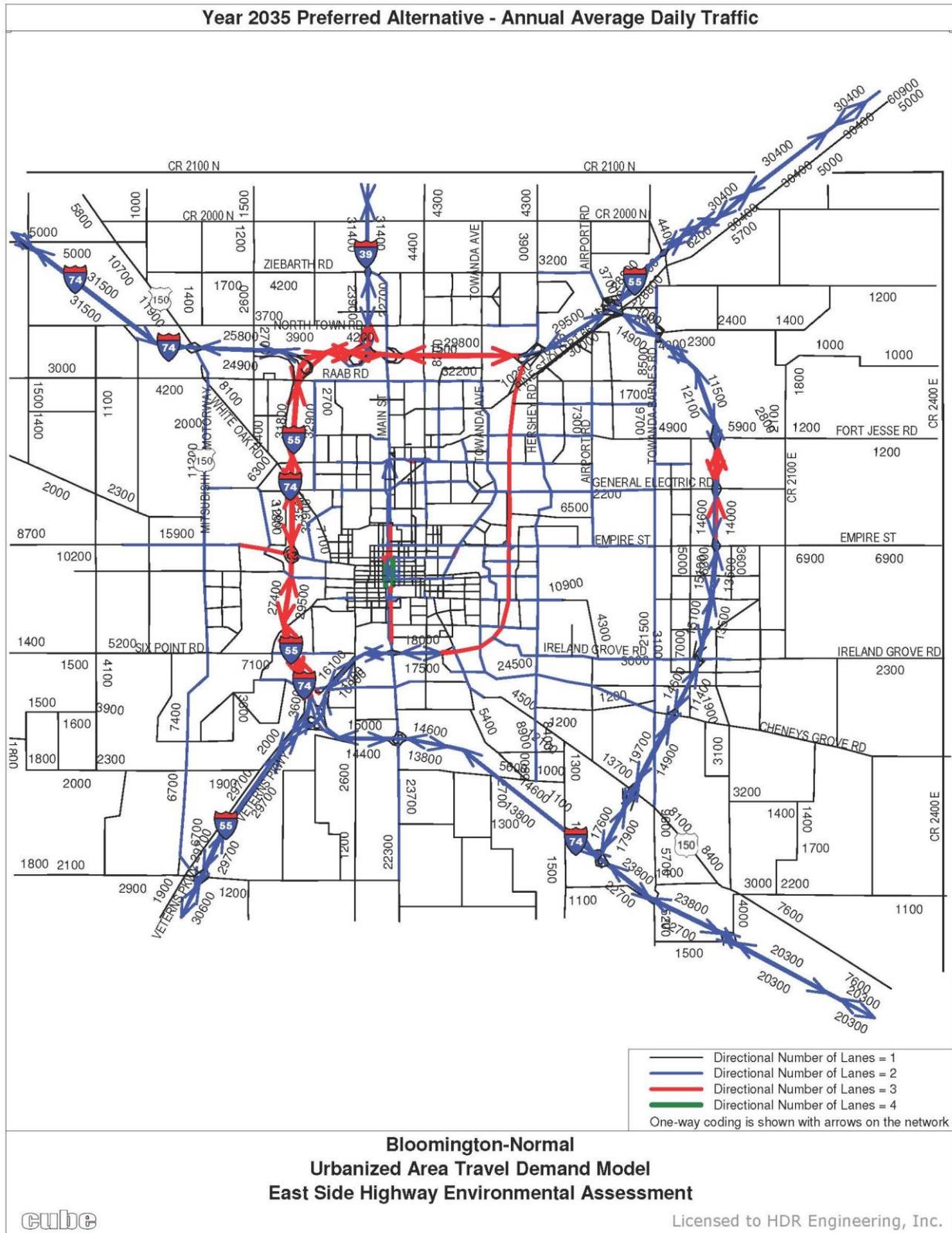


Table 4.2-1: Projected 2035 No Build and ESH Preferred Alternative Traffic Volumes

		2035 No Build	2035 ESH Preferred Alternative	Percent Increase in Max Volume
Roadway	Max Volume Location	Max Volume (vpd)	Max Volume (vpd)	
Towanda Barnes Road	South of Empire Street (IL 9)	41,200	32,300	- 22%
Fort Jesse Road	West of Towanda Barnes Road	11,200	11,800	5%
General Electric Road	West of Towanda Barnes Road	16,400	17,300	6%
Empire Street (IL 9)	West of Towanda Barnes Road	36,800	38,700	5%
Ireland Grove Road	West of Towanda Barnes Road	18,700	17,200	- 8%
US Rte. 150	East of 2000 East Road	15,200	8,800	- 42%
Interchange at Towanda	I-55	14,800	10,300	- 30%
Interchange at Downs	I-74	7,900	4,000	- 49%

Table 4.2-2: 2035 No Build and ESH Preferred Alternative v/c Ratios

		2035 No Build		2035 ESH Preferred Alternative	
Roadway	Roadway Section Limits	Max v/c	Projected Length of Roadways with Volume to Capacity Ratios (v/c) ≥ 1.0	Max v/c	Projected Length of Roadways with Volume to Capacity Ratios (v/c) ≥ 1.0
Towanda Barnes Road	I-74 to Jefferson Street (11.25 miles)	1.4	3.5	1.1	1.0
Fort Jesse Road	Airport Road to Towanda Barnes Road (1.2 miles)	1.3	0.3	1.2	0.3
General Electric Road	Airport Road to Towanda Barnes Road (1.2 miles)	1.0	0.6	1.0	0.6
Empire Street (IL 9)	Airport Road to Towanda Barnes Road (1.1 miles)	1.3	1.1	1.3	1.1
Ireland Grove Road	Streid Drive to Towanda Barnes Road (1.0 miles)	0.9	0.0	0.9	0.0
US Rte. 150	Hershey Road to Seminary Street (4.7 miles)	1.6	4.7	1.3	2.2
I-55 Interchange at N 1900 East Road (Towanda)	Historic U.S. 66 to CR 2000 N (0.7 miles)	1.7	0.5	1.2	0.5
I-74 Interchange at Seminary Street (Downs)	N 2000 East Road to Shaffer Drive (0.8 miles)	1.2	0.5	1.0	0.3



How will local and regional interstate access be affected by the Preferred Alternative?

Current interstate access for the east urbanized area is provided via the I-55 interchange in Towanda at the north and the I-74 interchange in Downs at the south. The 2035 traffic volumes on the roads that feed these interchanges, namely Towanda Barnes Road and U.S. Route 150, are expected to increase and will be over capacity as shown in **Table 4.2-2**. The ESH Preferred Alternative provides two new points of access to the interstate system on the eastside of the Bloomington-Normal area, one at I-55 south of the existing interchange in Towanda and one at I-74 west of the existing interchange in Downs. Providing new access points to the interstates reduces traffic volumes and relieves capacity on the local roads that feed the existing interchanges (see **Tables 4.2-1** and **4.2-2**). The proposed new access points improve operations of the existing interchanges and will reduce congestion experienced in the adjacent communities of Downs and Towanda.

How will local and regional access to the Central Illinois Regional Airport (CIRA) be affected by the Preferred Alternative?

CIRA forecasts that enplanements will continue to increase based, in part, on predicted population and employment growth in the Bloomington-Normal area. The forecasted increase in enplanements will result in additional traffic accessing the airport via the local road system, I-55, and I-74. The 2035 No Build traffic operations at the existing interchanges will suffer due to high traffic volumes. The addition of the ESH Preferred Alternative will result in an expected decrease in the volumes on the south leg of the intersection of Towanda Barnes Road and Empire Street/IL Route 9. A decrease from a v/c ratio of 1.2 (over capacity) to 1.0 (at capacity) is anticipated as a result of improving this intersection. The section of Empire Street/IL Route 9 that serves CIRA has an anticipated projected 2035 No Build v/c ratio of 1.1. With the ESH Preferred Alternative, the v/c ratio for the same section remains 1.1.

How will safety be affected by the Preferred Alternative?

The need to study an ESH was not precipitated on a safety issue within the existing transportation infrastructure network on the east side. When the ESH Preferred Alternative moves to the final design phase, current IDOT design standard will be applied assuring safe operation for the motoring public.



4.3 Environmental Impact Summary of Preferred Alternative

This section documents the anticipated environmental resource impacts of the ESH Preferred Alternative. The same environmental resources are studied for the Preferred Alternative as were studied for the four alternatives to be carried forward. As described in **Section 4.1**, Alternative 127 was selected as the Preferred Alternative, but the design was further refined to minimize potential impacts. For this reason, the Alternative 127 area and impacts from **Chapter 3** are slightly different than the Preferred Alternative area and impacts listed in this chapter.

Table 4.3-1 is a summary of the environmental impacts associated with the Preferred Alternative.



Table 4.3-1: Environmental Impacts of the Preferred Alternative

Criterion	Unit of Measure	Preferred Alternative Impacts
Environmental		
Water Quality/ Water Resources	Floodplain (acres affected)	0.008
	Floodway (acres affected)	0
	Streams (number of tributary crossings)	39
	Drinking Water Supplies - Private Wells within ROW (number affected)	1
	Drinking Water Supplies - Private Wells within 200 feet setback zone (number affected)	7
	Wellhead Protection Areas (number affected)	6
Wetlands	Wetland Areas (number affected)	0
	Wetland Areas (acres affected)	0
Special Waste	Recognized Environmental Conditions (RECs) (number affected)	19
T&E Species	State and Federal Threatened and Endangered Species (number affected)	0
Cover Type	Agricultural Land (acres)	939
	Urban/Built Up (Developed Land) (acres)	227
	Forest (acres)	0
	Prairie (acres)	4.4
	Riparian (acres)	15
	Wetlands (acres)	0
	Ponds (open water) (acres)	2.7
Community and Economic		
Residences	Homes, including homes on a farmstead (number displaced)	14
Environmental Justice	Minority and/or Low Income Population Impacted? (y/n)	N
Business	Businesses (number displaced)	0
	Parking (number of spaces lost)	0
Public Facilities & Services	Public Facilities (number displaced)	0
	Public Service Facilities with Access Change (number affected)	2
Utilities	Utilities Crossings (number of crossings)	15
Utility Infrastructure	Utility Infrastructure (number affected)	4
Noise	Representative Receptors with Predicted Noise Impacts	7
	Locations with Reasonable and Feasible Noise Barriers	0



Table 4.3-1: Environmental Impacts of the Preferred Alternative (continued)

Criterion	Unit of Measure	Preferred Alternative Impacts
Agricultural		
Prime and Important Farmland	Prime and Important Farmland (acres affected)	939
Landlocked Parcels	Landlocked Parcels (acres/number)	5.5/1
Farmsteads	Farm Residences (number affected)	11
	Farm Outbuildings (number affected)	30
Severances	Diagonally Severed Tracts (number affected)	12
	Laterally Severed Tracts (number affected)	1
	Severance Management Zones (acres)	57
Adverse Travel	Adverse Travel (miles)	16.4
	Tracts with Access Change (number affected)	9
Farms Otherwise Affected	Farms Otherwise Affected (tracts)	106
Number of Owners	Owners (number affected)	65
Uneconomical Remnants	Uneconomical Farm Remnants (number)	20
Centennial/Sesquicentennial Farms	Centennial or Sesquicentennial Farms (number affected, by family)	5
Cultural		
Cultural	Historic Sites (number affected)	0
	Cemeteries (number affected)	0
Sustainability		
Farmland Preservation	Area of farmland between the alternative and the 2035 Land Use Plan (acres)	3,117
	Farm tracts located between the alternative and the 2035 Land Use Plan (number)	115
Watershed	Amount of ROW within each watershed (% watershed affected)	
	Six Mile Creek Watershed	0.18%
	Money Creek Watershed	0.63%
	Kickapoo Creek/Little Kickapoo Watershed	0.32%
Riparian Areas	Riparian Areas (acres affected)	19.7
Highly Erodible Soils	Highly Erodible Soils (acres affected)	30.1



4.3.1 Social and Economic

Demographics

How will residences and businesses in the study area be affected by the Preferred Alternative?

The Preferred Alternative will not displace any businesses. However, 14 farm and non-farm residences will be displaced. From south to north, these residences are at the following general locations:

- Three residences are within and in the vicinity of the interchange with Morrissey Drive/U.S. Route 150
- One residence east of the interchange with Cheneys Grove Road
- Three residences within and in the vicinity of the interchange with Ireland Grove Road
- Three residences within the interchange with Empire Street/IL Route 9
- Two residences within the interchange with Fort Jesse Road
- One residence within the interchange with Towanda Barnes Road
- One residence on Ziebarth Road

In addition, an outbuilding will be displaced in the northeast quadrant of the interchange with Morrissey Drive/U.S. Route 150. However, the residence associated with it will not be impacted. Locations of displaced residences are depicted in **Figure 4.3.1-1**.

The Preferred Alternative will result in no impacts to the Lamplighter, Eagle View, Harvest Pointe, The Grove, and Wexford Hills/Dover Ridge neighborhoods.

How will tax revenue change as a result of the Preferred Alternative?

Tax revenue will change due to the displacements of residences and loss of farmland in the study area as a result of the Preferred Alternative. The total tax revenue loss was estimated to be the property tax amount in 2014 of displaced residences, businesses, and lost farmland. Under the Preferred Alternative, total tax revenue lost was estimated to be \$101,069.83, which is equivalent to 0.03 percent of the total property tax revenue collected by McLean County (\$308,372,382.00).



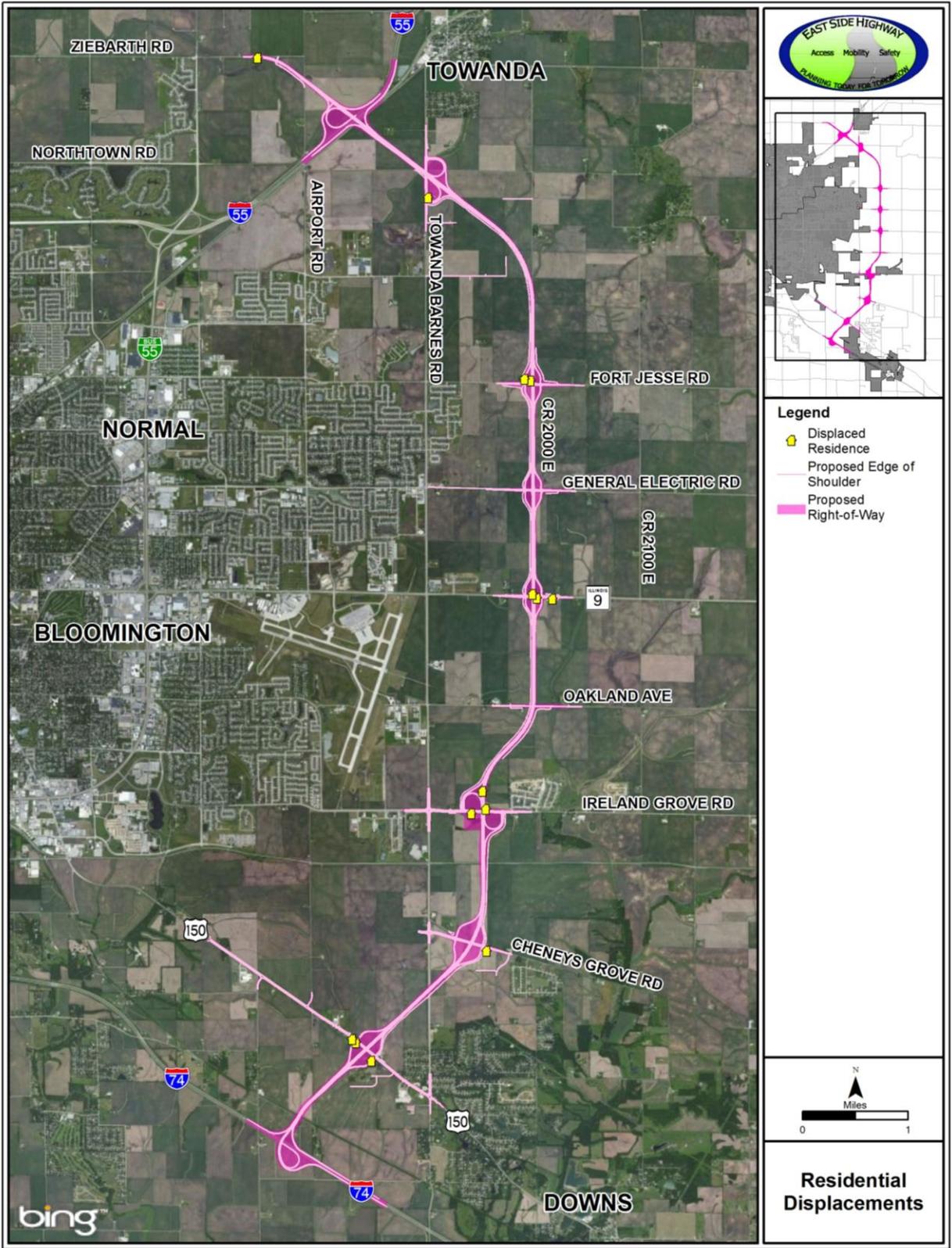
Environmental Justice and Title VI Protected Groups

Will the Preferred Alternative affect any specific populations?

One low-income and two minority populations were identified in the study area. However, the Preferred Alternative is greater than one mile to the east from these populations. Therefore, no impacts to these populations are anticipated. Additionally, no elderly or populations with disabilities were identified in the study area. The Preferred Alternative will not cause any high or adverse impacts for low-income, minority, elderly or populations with disabilities.



Figure 4.3.1-1. Residential Displacements



Land Use

How will the Preferred Alternative affect land use?

The need for the ESH was based upon the 2035 Land Use Plan developed for the Bloomington-Normal area. Local agencies, in coordination with the public, planned the majority of the area's future growth to occur on the east side of Bloomington-Normal. The population and employment forecasts for the area, combined with the planned development areas, will generate additional traffic volumes that will exceed the roadway capacity available on the east side. The ESH, in combination with improvements to local roads, will address the roadway capacity shortage associated with the future land use plan.

The Preferred Alternative is located to support future land uses in the east side of Bloomington-Normal. The ESH would extend through areas of future planned urbanization from south of Ireland Grove Road to General Electric Road, the center of the planned eastern growth area. The location of the Preferred Alternative will support the planned land uses in this area and will also improve access to regional destinations, such as the Central Illinois Regional Airport (CIRA). Some of the area adjacent to the ESH is planned to remain as agricultural land into the planning horizon; although the ESH would require the acquisition of some farmland, it accommodates remaining agricultural activities by maintaining nearly all of the existing local and county road network.

What cumulative or indirect land use impacts could occur?

Induced urban development could be an indirect land use impact that may result from the ESH. The majority of the Preferred Alternative is located east of the planned growth area, in areas that are expected to remain agricultural for the planning horizon. The construction of the ESH will improve accessibility to east side areas planned for growth in addition to the areas planned to remain undeveloped. A potential impact of the ESH's location is the potential for leapfrog land development between the ESH and future urban area. Leapfrog development creates sprawling urban areas that require greater investment in infrastructure. This leapfrog development could occur at the north and south termini of the project, where the ESH extends into areas not planned for future development. Leapfrog development can be reduced or avoided if county and local agencies (and their boards and commissions) uphold the land use plan, its planned edge of future urbanization, and the areas planned to remain

What are Indirect Impacts?

Impacts that appear later in time or are farther removed in distance, but are still reasonably foreseeable.

What are Cumulative Impacts?

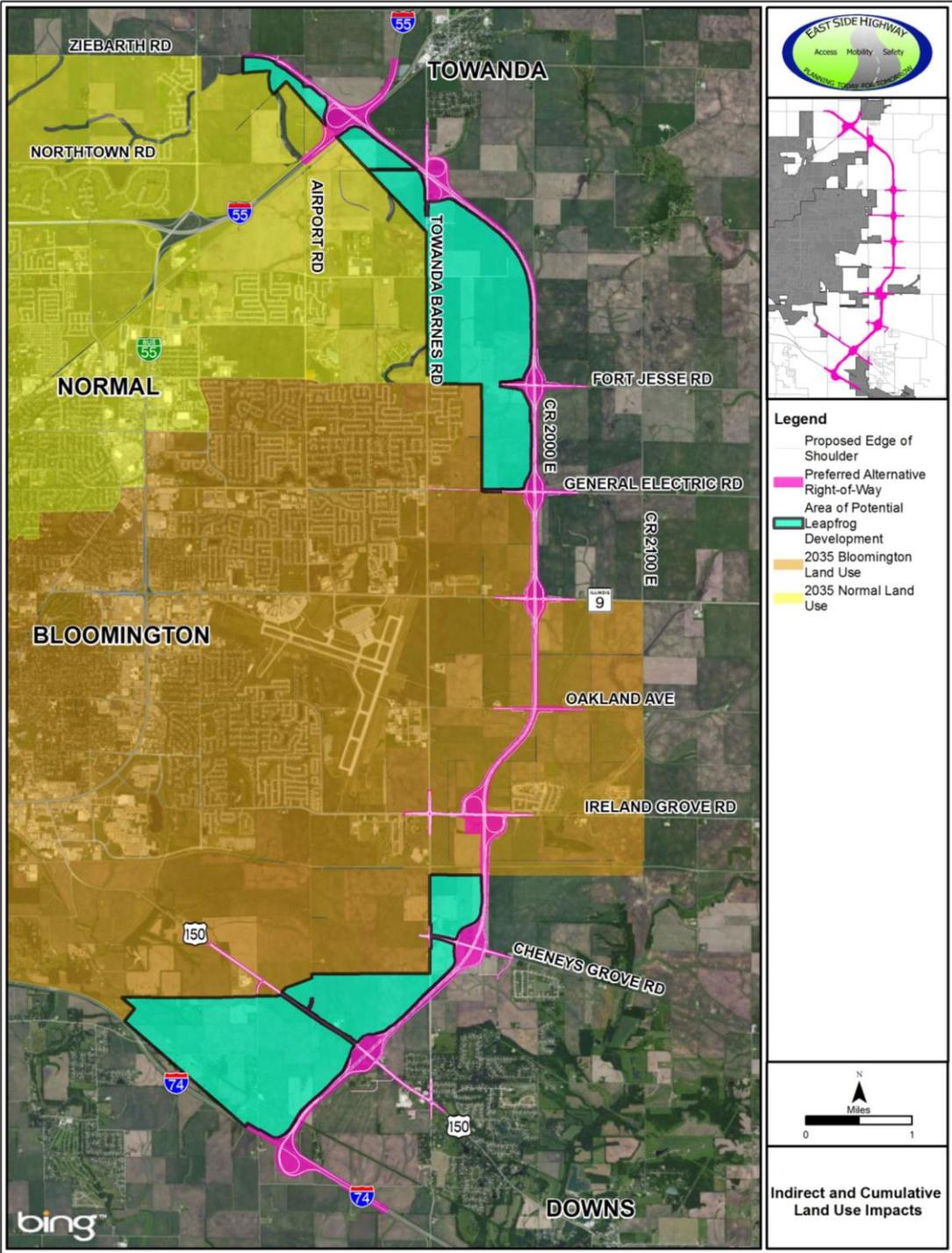
Sum of direct and indirect impacts and impacts from other projects of the past, present, and reasonably foreseeable future.



as agricultural.

Figure 4.3.1-2 illustrates areas that may have a higher chance for leapfrog development due to the Preferred Alternative.

4.3.1-2 Indirect and Cumulative Land Use Impacts



Public Services and Facilities

How will public services be impacted by the Preferred Alternative?

The Preferred Alternative will not impact any of the public services that exist in the study area.

How will public facilities be impacted by the Preferred Alternative?

The Preferred Alternative will not impact any of the community facilities that exist in the study area. However, access to the Victory Christian Center and the Jehovah's Witness East located on U.S. Route 150 will change. As a result of the project, U.S. Route 150 will be widened and a portion of the existing driveway to these facilities will be eliminated. Therefore, a new driveway will need to be constructed. Also, entrance to the Victory Christian Center and the Jehovah's Witness East will be temporarily relocated during construction activities. These facilities are shown in **Figure 4.3.1-3**.

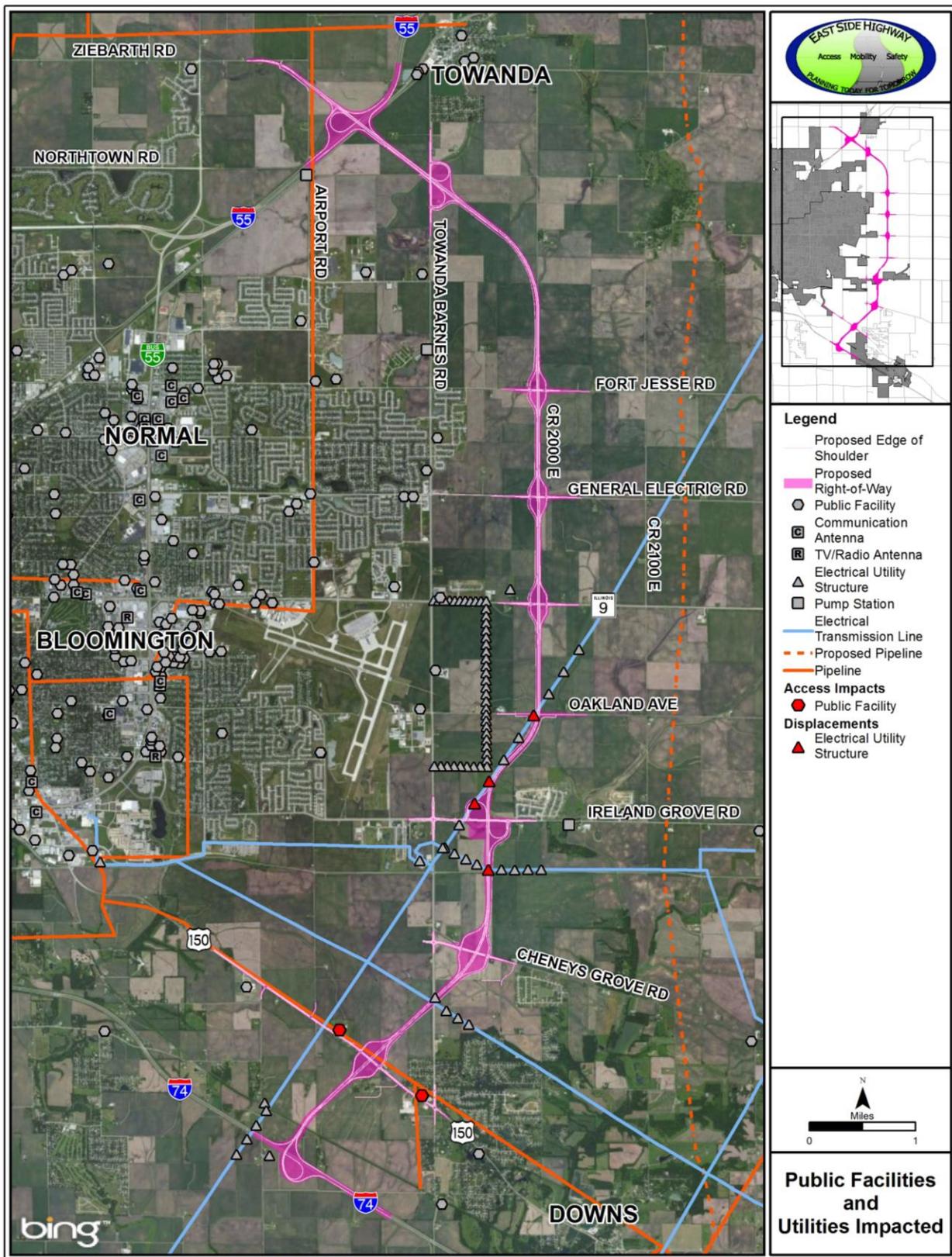
How will utilities be impacted by the Preferred Alternative?

Four electrical facilities (three single wood pole and one double wood pole electrical transmission towers) will be impacted as a result of the Preferred Alternative. These electrical facilities are located on Oakland Avenue and within and near the interchange with Ireland Grove Road. Because the electrical facilities are within the Preferred Alternative right-of-way, they will need to be relocated. Additionally, the Preferred Alternative will result in seven electrical crossings throughout the study area (**Figure 4.3.1-3**).

Although no known impacts to oil or natural gas pipelines will occur, the Preferred Alternative will result in eight pipeline crossings throughout the study area. Location of utility facilities and crossing are depicted in **Figure 4.3.1-3**.



Figure 4.3.1-3. Public Facilities and Utilities



Parks and Trails

How will existing or planned parks be impacted by the Preferred Alternative?

The Preferred Alternative will not directly impact or use property from existing or planned parks in the study area, including:

- *The Grove Park* - approximately 0.70 mile from the Preferred Alternative. The ESH includes local street improvements on Ireland Grove Road adjacent to The Grove, but these street improvements end west of the Kickapoo Creek, at the edge of the park.
- *Ireland Grove Sports Fields* - not impacted by the Preferred Alternative.
- *Eagle View Park* - approximately 0.65 mile west of the Preferred Alternative.
- *Boyd-Wesley Park* - adjacent to the Preferred Alternative, but no right-of-way is required from the park.

Functions of existing or planned parks are not anticipated to be impacted by the Preferred Alternative. For noise and visual impact predictions, refer to **Section 4.3.5**.

The Preferred Alternative does not result in the use of publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites (see **Section 4.3.3**). The Preferred Alternative also does not result in the use of any properties that were funded by the Land and Water Conservation Fund, referred to as Section 6(f) lands. For these reasons, no Section 4(f) or 6(f) impacts are anticipated due to the Preferred Alternative.

What trail improvements are planned as part of the Preferred Alternative?

The specific trail system improvements proposed as part of the ESH are described in **Section 4.2** of this chapter.

What connecting trail improvements are proposed to be completed by others?

The following trail connections to the ESH are proposed to be completed by others as separate locally funded projects and will not be included in the ESH improvements:

- *Planned Trail along Railroad Right-of-Way, near I-74*: The Norfolk Southern Railroad owns the track right-of-way in this area, and the trail would only be constructed if the railroad allows a trail easement in the future. The ESH will be constructed to allow rail traffic to pass under the roadway, as the railroad could resume operations on this line. A connection to the ESH from a future trail on the railroad line would be completed by others.



- *Planned Trail along Railroad Right-of-Way south of Ireland Grove Road:* The Norfolk Southern Railroad owns the track right-of-way in this area, and the trail would only be constructed if the railroad allows a trail easement in the future. The ESH will be constructed to allow rail traffic to pass under the roadway, as the railroad could resume operations on this line, and the bridge opening under the ESH will be wide enough to accommodate a future trail along the railroad, to be constructed by others.
- *Planned Drainageway Trail south of Oakland/1300 N Road:* The ESH will include an underpass for this planned trail; the drainageway trail would provide a crossing for the ESH between the Ireland Grove Road interchange and Oakland/1300 N Road overpass.
- *Planned Trail along Towanda-Barnes Road:* A trail is proposed along Towanda Barnes Road from Morrissey Drive/U.S. 150 to Raab Road with various connections to the future trail system along the way. It is recommended that this trail be extended north to connect the ESH trail at the Towanda Barnes Road interchange.
- *Planned Trail between 1300 N Road and IL Route 9:* This trail will not be accommodated by an ESH overpass.
- *Drainageway Trail south of IL Route 9:* This trail will not be accommodated by an ESH overpass.
- *Drainageway Trail between IL Route 9 and General Electric Road:* This trail will not be accommodated by an ESH overpass.
- *Trail Overpass Bridge at I-55:* The ESH trail system will terminate at the U.S. Route 66 Trail. As areas north of I-55 develop in future years, there could be a need to provide a trail bridge over I-55 to connect these northern residential areas to the U.S. Route 66 Trail and the ESH trail. It is recommended that a trail overpass bridge at I-55, if warranted, be evaluated and implemented as a local project, separate from the ESH.

4.3.2 Agricultural Resources

How would agricultural operations or land be affected by the Preferred Alternative?

Farms can be affected in a variety of ways when a new road is constructed. Land and buildings can be acquired for road construction and small remnants of farm fields that are landlocked or too small to farm economically may be created. A new road can also sever farm fields or make the remaining



field more difficult to farm. **Table 4.3-1** describes all of these effects for the farms within the Preferred Alternative.

The Preferred Alternative impacts 939 acres of prime and important farmland, a larger area of impact than the total for original Alternative 127 which impacted 888 acres (see **Table 3.2-1**). This is because the Preferred Alternative right-of-way area is about 95 acres larger than the Alternative 127 footprint, as it includes area for additional interchange improvements at I-55, access roads to landlocked parcels, and an area for pond impact mitigation south of Ireland Grove Road.

The Preferred Alternative was modified from the original Alternative 127 to include additional access roads that reduce landlocked parcels from seven parcels for the original Alternative 127 to one parcel for the Preferred Alternative. This change also reduced the number of landlocked acres from 234 acres to 5.5 acres. The additional access roads also reduce overall adverse travel for farm vehicles from 22.8 miles in the original Alternative 127 to 16.4 miles in the Preferred Alternative.

For centennial and sesquicentennial farm data that was available from the Illinois Department of Agriculture, it was determined that the Preferred Alternative impacts five centennial or sesquicentennial farms. Centennial and sesquicentennial farms have no legal protections from the State of Illinois; however, efforts to avoid or minimize impacts to these farms were made during the development and refinement of the ESH alternatives.

The Preferred Alternative will require the acquisition of eleven farm residences and 30 farm outbuildings and will impact agricultural property held by 65 different owners.

How did the Natural Resources Conservation Service score the Preferred Alternative?

The IDOA and the Natural Resources Conservation Service (NRCS) use the Land Evaluation and Site Assessment (LESA) System to assess the effects on agricultural land by state and federal projects. The results of the LESA evaluation are provided on the NRCS's "Farmland Conversion Impact Rating," Form AD-1006. See **Appendix D** for Form AD-1006 documentation. The NRCS evaluates the quality (productivity) of the soils that would be affected, while the Illinois Department of Agriculture (IDOA) rates site-specific factors, including:

- The amount of agricultural land required
- The proximity of the land to be acquired to existing highway right-of-way
- Off-site land required for borrow materials and wetland mitigation
- Creation of (a) severed parcels, (b) uneconomical remnants, (c) landlocked parcels and (d) adverse travel



- Relocations of rural residents and farm buildings
- Whether highway design standards will be used that minimize impacts to agricultural land

LESA scores of 0 to 175 points indicate a low rating for protection, scores of 176 to 225 points indicate a moderate rating for protection, and scores of 226 to 300 indicate the land should be retained for agricultural use in most cases and an alternative alignment should be considered. The higher the LESA score, the more important the farm land is for long-term agricultural use. Alternatives that adversely affect agriculture may be recommended, but only after full consideration of adverse effects and less damaging alternatives.

The LESA score for the ESH Preferred Alternative was 270.

There were 129 alternatives initially considered for the project. The use of agricultural land, minimizing impacts to agricultural operations, and placing improvements in proximity to currently developing areas were all factors considered in the identification of the alternatives. Twenty-six alternatives that impacted the most prime and important farmland were eliminated in the Macro Alternatives Analysis screening and another two alternatives were eliminated in the Alignment Analysis screening for farmland impacts. See **Chapter 2 Alternatives** for information on the alternatives screening process. Alignments to the east and west of the Preferred Alternative were considered for the project. The soils in the study area are considered prime and important for farmland. Due to this, other alternatives in this area would result in similar LESA scores. The Preferred Alternative minimizes the agricultural impacts by adding access roads to reduce landlocked parcels and adverse travel for farm vehicles, staying close to planned future growth areas to discourage leapfrog development of farmland, and following property lines where possible to minimize farm severances. The IDOA concurred with the Preferred Alternative on November 20, 2013 as part of the NEPA/404 Merger process. In a letter on July 11, 2016 the IDOA stated they had no objection to the IDOT District 5 proceeding with the highway improvements and that the project is consistent with the IDOT's Agricultural Land Preservation Policy and in compliance with the state's Farmland Preservation Act. See **Appendix D** for a copy of the IDOA letter and IDOA opinion.

What economic impact would the Preferred Alternative have on the region's agriculture?

Farm acreage loss would reduce total revenue to existing operations and farm production is an important source of total revenue generated in McLean County. The reduction in farm revenue may temporarily reduce the total county revenues. **Table 3.2-1** summarizes the lost revenue anticipated for each of the detailed alternatives. The Preferred Alternative would result in a loss of \$743,000



per year. This is approximately 0.1 percent of the total farm revenue in McLean County which is the same percentage as the detailed alternatives.

What cumulative and indirect impacts to agriculture may be influenced by the Preferred Alternative?

As discussed in the land use analysis for the Preferred Alternative in **Section 4.3.1**, the planned future land use for the Bloomington-Normal area transitions from its current agricultural land use into developed, urbanized uses. This development is needed to support forecasted population and employment, and the ESH was proposed to provide additional roadway capacity needed from the associated increase in traffic volumes. The future land use plans for the local jurisdictions (see **Section 3.1.3**) show the areas that are planned for conversion from agricultural use to urban uses within the planning horizon. Thirty percent of the Preferred Alternative corridor is located within the 2035 Planning Boundary, with the remaining 70 percent located beyond areas of planned development. Near the northern limit of the study area south of I-55, the edge of planned urbanization is as far as one mile from the Preferred Alternative. Near the southern limit of the study area north of I-74, the distance between the Preferred Alternative and the edge of planned development is 1.5 miles. As stated in the land use analysis for the Preferred Alternative in **Section 4.3.1**, the likelihood of leapfrog land development is higher than existing conditions for areas where the Preferred Alternative is located beyond the edge of planned urban development. The new accessibility provided by the ESH could influence development in the area of the highway rather than in the planned development areas. Leapfrog development could take additional farmland out of production than what has been planned by local agencies.

What measures are proposed to minimize or resolve agricultural impacts?

Adhering to the future land use plan for proposed development would reduce or alleviate leapfrog development near the ESH. The following management and design practices minimize farmland conversion and include appropriate mitigation. These practices would be incorporated into the project final design to help minimize disruptions to agricultural activities and residences:

- Construct field access points for farm machinery, where deemed practical.
- Widen field entrances, will be reviewed according to design policies upon request, to allow room for semi-trucks to enter and exit from the fields.
- Maintain existing surface and subsurface drainage and work proactively with landowners prior to construction to locate existing field tiles. Extend, intercept or redirect tile drainage as needed.



- Control sedimentation and erosion to minimize loss of topsoil into streams and roadside ditches, as well as from adjacent fields.
- Consider the use of acquired uneconomical remnants and landlocked parcels when choosing locations for project elements, such as storm water quality improvements.

4.3.3 Cultural Resources

Will the Preferred Alternative impact historic or archaeological resources?

Historic Resources

The Preferred Alternative avoids impacts to above ground historic properties on or eligible for the National Register of Historic Places (NRHP). The Preferred Alternative would be 240 feet southwest of Duncan Manor, a property located at 1002 Towanda Barnes Road that is listed on the NRHP, and the Preferred Alternative will not acquire land from the Duncan Manor property. State Historic Preservation Officer (SHPO) staff commented at a meeting on January 27, 2016 that the proximity of ESH would likely not cause an adverse effect, provided a row of trees is planted for the visual screening of Duncan Manor. In coordination with SHPO and landscape architects, a tree-planting plan will be developed to ensure that native salt-tolerant trees are planted during project construction. A meeting with the owners of Duncan Manor was held at Duncan Manor on September 11, 2015 to discuss the project. They were also invited to the meeting on January 27, 2016 to discuss potential impacts to the site. They were sent a letter on February 29, 2016 requesting comments and concurrence with the determination of no adverse effect if vegetative screening is installed during project construction, and were requested to respond in 30 days. No response was received from the owners of Duncan Manor.

The Preferred Alternative is over 5,100 feet (0.97 miles) west of the house at 17444 N 2100 East Road, and therefore does not impact this NRHP eligible property. In addition there are five other homes that are eligible for the NRHP for which impacts will be avoided. These are located on the east side of 1750 East Road and south of I-74 at 8841 N 1750 East Road, on the west side of Towanda Barnes Road and north of East Raab Road/East 1700 North Road at 4408 E Raab Road, on the south side of Ireland Grove Road and east of Kickapoo Creek Road at 5305 Ireland Grove Road, on the south side of Ireland Grove Road and east of 2100 East Road at 21229 E 1200 North Road, and on the north side of 1300 North Road and east of Towanda Barnes Road at 19580 E 1300 Road. The State Historic Preservation Officer (SHPO) concurred on December 22, 2014 that these sites would not be adversely affected.



Archaeological Resources

Archaeological Test Excavations

Test excavations are conducted to determine if an archaeological site is eligible for the National Register of Historic Places (NRHP). Methods of excavation involve carefully hand-digging in addition to machine (backhoe) excavations. Sites are typically determined eligible for NRHP when they have the potential to yield new information about history or prehistory (NRHP Criterion D).

The archaeological survey did not identify any mounds or cemeteries within the alternatives. Survey teams examined 820 acres of land, representing 68 percent of the Preferred Alternative. Five archaeological sites were identified that warrant NRHP consideration under Criterion D.

When access is secured by the County, archaeological test excavations will occur at the five sites in the Preferred Alternative area to determine eligibility of archaeological sites for the NRHP.

Additional surveys will also be conducted in areas of the Preferred Alternative where access was denied during the initial surveys.

What measures are proposed to avoid or minimize effects to cultural resources?

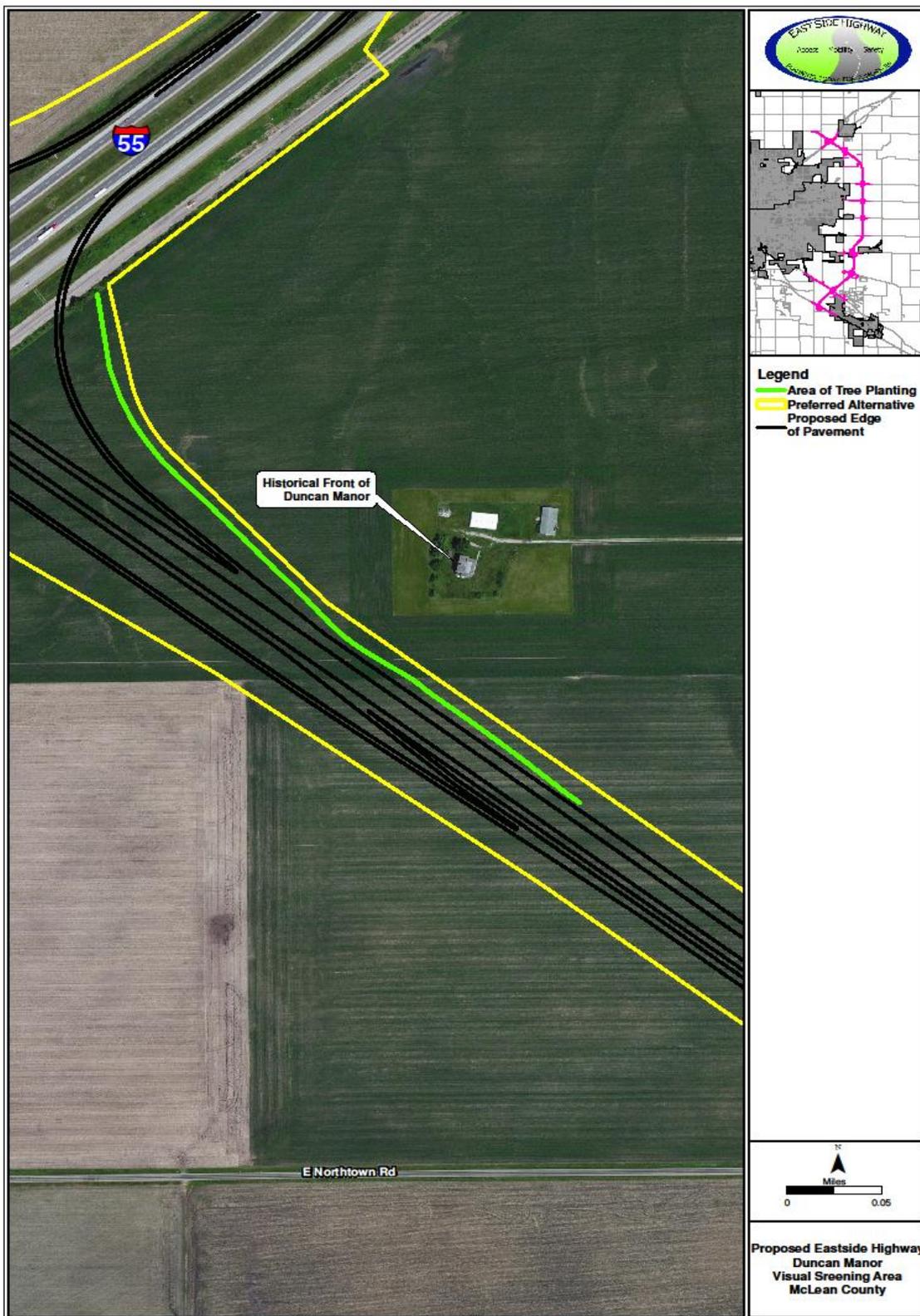
A vegetative screening of tree plantings will be installed along the ESH right-of-way near the NRHP listed Duncan Manor. The plantings will not occur until construction starts on this section of the ESH project. A certified arborist or landscape architect and the SHPO will be consulted with to determine the appropriate spacing and species of trees. The trees will be low-maintenance native species to Illinois that are salt tolerant or moderately salt tolerant, of both salt spray and soil salt. The location of the tree plantings are shown on **Figure 4.3.3-1: Visual Screening Area**. On June 16, 2016 the SHPO concurred that with the installation of vegetative screening the undertaking will not adversely affect the qualities that made Duncan Manor eligible for listing on the National Register of Historic Places (See **Appendix D** for a copy of the SHPO's concurrence).

Additional archaeological studies are planned for the Preferred Alternative. If impacts to a site determined eligible for the NRHP cannot be avoided, then data-recovery excavations will be conducted by the Illinois State Archaeological Survey on behalf of IDOT and the county to mitigate the adverse impact. The mitigation of adverse impacts will be conducted in consultation with the FHWA, SHPO, and interested Tribes, after a Memorandum of Agreement (MOA) is developed and ratified that stipulates (1) test excavations to identify and evaluate archaeological resources at five identified archaeological sites that warrant NRHP consideration under Criterion D and (2) additional survey work will be conducted in those areas where access had been denied. See **Chapter 5** for additional information on the commitments for visual screening and further archaeological surveys.





Figure 4.3.3-1 Visual Screening Area



4.3.4 Air Quality

How could air quality be affected by the Preferred Alternative?

Variables that play the largest role in determining differences in air quality for roadway alternatives are vehicle miles traveled (VMT), congestion, number of diesel trucks expected compared to passenger cars, average age of vehicles and types of fuel used.

In accordance with the IDOT-IEPA “Agreement on Microscale Air Quality Assessments for IDOT Sponsored Transportation Projects,” this project is exempt from project-level carbon monoxide (CO) air quality analysis because the highest design-year approach-volume on the busiest leg of all intersections is less than 5,000 vph or 62,500 ADT.

No portion of the study area is within a designated non-attainment or maintenance area for any of the air pollutants for which the USEPA has established standards. Accordingly, a conformity determination under 40 CFR Part 93 (“Determining Conformity of Federal Actions of Federal Actions to State or federal Implementation Plans”) is not required.

The study area is entirely in attainment for all six pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. McLean County is listed as an attainment area for all criteria pollutants.

How will construction activities affect air quality?

Demolition and construction activities can result in short-term increases in dust and equipment emissions. The potential air quality impacts will be short-term, occurring only while demolition and construction work is in progress. IDOT’s Standard Specifications for Road and Bridge Construction include provisions on dust control. Under these provisions, dust and airborne dirt generated by construction activities will be controlled through dust control procedures when warranted.

Techniques include minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces. With the application of appropriate measures to limit dust emissions during construction, the project will not cause any significant, short-term particulate matter air quality impacts.

Emissions from construction vehicles are also directly addressed by IDOT policies requiring use of cleaner diesel fuel, idling restrictions, and emission control device installation.



4.3.5 Traffic Noise

What locations were studied for traffic noise from the Preferred Alternative?

A noise impact occurs if **future Build condition** noise levels in the project area are projected to approach, meet, or exceed the Noise Abatement Criteria (see **Table 3.5-1**), or are greater than 14 dB(A) above existing. Noise barriers along the ESH would need to be studied wherever noise impacts occur.

The noise levels of 67 and 72 dB(A) are comparable to outdoor commercial areas or an indoor vacuum cleaner (see **Figure 3.5-1**).

Thirty-three (33) representative noise receptors were identified near the Preferred Alternative, as shown in the Environmental Inventory Map in **Appendix A**. The majority of the receptors are residential uses and farmsteads.

How noisy is the project area without the ESH?

Existing (2012) and future (2035 No Build) noise levels for the Preferred Alternative were predicted using FHWA Traffic Noise Model (TNM) 2.5. **Table 4.3.5-1** summarizes projected noise levels in the project area. Refer to **Figure 3.5-1** to see how

these noise levels compare to common indoor and outdoor noise levels.

Existing (2012) modeled noise levels for the project area ranged from 43 dB(A) at Receptor 8B to 64 dB(A) at Receptor 1. The year 2035 No Build noise modeling assumed the ESH would not be constructed, and the existing roadway network would be maintained. Year 2035 No Build noise levels at the studied receptors ranged from 46 dB(A) at Receptor 8B to 65 dB(A) at Receptors 1 and 5B.

How will the Preferred Alternative affect traffic noise levels?

The proximity of the Preferred Alternative to the studied noise receptors is important to how noise levels will change with the ESH.

Future 2035 Build noise levels for the Preferred Alternative were predicted using TNM 2.5. **Table 4.3.5-1** summarizes projected noise levels in the project area.

The loudest modeled 2035 Build noise level was 77 dB(A) at Receptor 2. The quietest modeled level in the Build condition was 49 dB(A) at Receptor 8B.

Future Build noise levels for 31 of the 33 receptors increased 1 to 26 dB(A) from existing traffic noise levels, due to projected traffic volumes increases and proposed roadway geometry. Noise levels at R9 decrease by 1 dB(A) from existing due to Cheneys Grove Road shifting away from the receptor in the Build condition. Predicted Build traffic noise levels are less than existing ambient noise levels at Receptor 15. The field noise monitoring for Receptor 15 had other contributory, non-roadway noise sources, including wildlife, house construction in the distance, and rustling of



trees/fields. TNM cannot predict non-roadway noise sources and only predicts noise from roadways. Because of this, the modeled roadway noise level (from TNM) at Receptor 15 is lower than the existing overall noise level monitored in the field.

Table 4.3.5-1: ESH Traffic Noise Modeling Results

Receptor Number Land Use (NAC (dB(A)))	Existing Noise Level (2012) (dB(A))	No Build 2035 Noise Level (dB(A))	Build 2035 Alternative Noise Level (dB(A))	Change In Noise Level From Existing to Future Build (dB(A))	Change in Noise Level from Future No Build to Future Build (dB(A))
R1 SFR (67 dB(A))	64	65	68	4	3
R2 SFR (67 dB(A))	58	59	77	19	18
R3 SFR (67 dB(A))	60	63	66	6	3
R3A SFR (67 dB(A))	58	61	62	4	1
R3B School (67 dB(A))	56	59	61	5	2
R4 SFR (67 dB(A))	61	63	66	5	3
R5 SFR (67 dB(A))	60	63	65	5	2
R5A SFR (67 dB(A))	53	56	60	7	4
R5B SFR (67 dB(A))	63	65	65	2	0
R5C SFR (67 dB(A))	62	64	64	2	0
R6 Place of Worship (67 dB(A))	58	61	64	6	3
R7 Place of Worship (67 dB(A))	54	57	61	7	4
R8 SFR (67 dB(A))	53	58	60	7	2
R8A SFR (67 dB(A))	58	62	62	4	0
R8B SFR (67 dB(A))	43	46	49	6	3
R9 SFR (67 dB(A))	57	60	56	-1	-4
R9A SFR (67 dB(A))	59	59	62	3	3
R10 SFR (67 dB(A))	55	57	67	12	10
R10A Park (67 dB(A))	58	58	59	1	1



Receptor Number Land Use (NAC (dB(A)))	Existing Noise Level (2012) (dB(A))	No Build 2035 Noise Level (dB(A))	Build 2035 Alternative Noise Level (dB(A))	Change In Noise Level From Existing to Future Build (dB(A))	Change in Noise Level from Future No Build to Future Build (dB(A))
R11 SFR (67 dB(A))	55	57	63	8	6
R12 SFR (67 dB(A))	53	56	67	14	11
R13 SFR (67 dB(A))	53	55	63	10	8
R13A SFR (67 dB(A))	49	51	60	11	9
R15* SFR (67 dB(A))	55	55	51	-4	-4
R16 SFR (67 dB(A))	53	56	65	12	9
R17 SFR (67 dB(A))	53	55	65	12	10
R20 SFR (67 dB(A))	56	63	64	8	1
R21 SFR (67 dB(A))	59	63	64	5	1
R22 SFR (67 dB(A))	52	57	58	6	1
R26 SFR (67 dB(A))	58	60	61	3	1
R27* SFR (67 dB(A))	56	56	60	4	4
R29 Recreation (67 dB(A))	63	63	64	1	1
R30 SFR (67 dB(A))	45	47	71	26	24

Boldface and highlighted noise levels indicate noise impacts (Build noise levels approach, meet, or exceed the NAC, or are greater than 14 dB(A) above existing noise levels)

* Receptor located beyond 500 feet from the Preferred Alternative, but included in study in response to public comments.

Note: Receptor numbering is not continuous because several receptors in the project area were not within the noise study area

SFR = Single Family Residential



Are there traffic noise impacts from the ESH?

Seven of the 33 representative receptors because they approach, meet, or exceed the FHWA NAC. The Build noise levels of those seven receptors are shown in boldface and highlighted in **Table 4.3.5-1**. Two of the seven receptors also had Build noise levels more than 14 dB(A) greater than existing levels and those noise levels are also highlighted. The seven receptors are shown in **Table 4.3.5-2** and the Preferred Alternative figures in **Appendix A (A-10, A-11, A-12)**. **Table 4.3.5-2** lists the number of receptors that are represented by each of the impacted representative receptors. All but one of the impacted representative receptors are single homes/farmsteads, with no other impacted receptors within the CNE.

Table 4.3.5-2 Impacted Representative Receptors

Impacted Representative Receptor	Description and Location	Build 2035 Noise Level, dB(A)	Represented Receptors in CNE
R1	Farmstead adjacent to I-74	68	1
R2	Farmstead adjacent to I-74, on 1750 East Road	77*	12
R3	Single family residential home on south side of US Highway 150	66	1
R4	Farmstead on north side of US Highway 150	66	1
R10	Farmstead on north side of Ireland Grove Road	67	1
R12	Farmstead on north side of Ireland Grove Road	67	1
R30	Farmstead on south side of Ziebarth Road	71*	1

* denotes receptor also had noise increase of more than 14 dB(A) from existing conditions

The remaining 26 studied representative receptors did not have future Build traffic noise levels that approached, met, or exceeded the FHWA NAC. These receptors also did not have traffic noise increases greater than 14 dB(A). For these reasons, Receptors 5-9, 11, and 13-29 did not have traffic noise impacts.

Is noise abatement considered for all land use types?

Noise abatement is not considered for the following land uses:
 Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities, and warehousing.

When is noise abatement considered for IDOT projects?

Per the IDOT noise policy, there are three criteria that must be met for noise abatement to be recommended.



How does IDOT determine allowable barrier cost?

Three factors adjust the base allowable barrier cost per benefited receptor (“base cost”) of \$24,000:

1. Absolute Noise Level

Build Noise Level without Abatement	Dollars Added to Base Cost
Less than 70 dB(A)	\$0
70 – 74 dB(A)	\$1,000
75 -79 dB(A)	\$2,000
80 dB(A) or greater	\$4,000

2. Noise Increase from Existing

Increase in Noise from Existing to Build (Without Abatement)	Dollars Added to Base Cost
Less than 5 dB(A)	\$0
5 – 9 dB(A)	\$1,000
10 - 14 dB(A)	\$2,000
15 dB(A) or greater	\$4,000

3. Date of Development Compared to Road Construction

Project on New Alignment or Receptor Existed Before Road	Dollars Added to Base Cost
No for both	\$0
Yes for both	\$5,000

Base cost can increase by as much as \$13,000 per benefited receptor, bringing allowable barrier cost per benefited receptor to a maximum of \$37,000.

Source: *Illinois DOT Highway Traffic Noise Assessment Manual, 2011*

1. *A noise impact must be determined.*
2. *Noise abatement must be feasible:* Noise abatement is feasible if it is determined possible to design and construct, and achieves at least a 5 dB(A) traffic noise reduction for at least one impacted receptor.
3. *Noise abatement must be reasonable:* Noise abatement is reasonable if it meets several criteria:
 - a) It must be cost effective. The estimated cost to build the abatement must be less than IDOT’s allowable abatement cost per benefited receptor (a ratio of the cost of the abatement to the number of receptors that are benefited by the abatement), which is \$24,000 per benefited receptor. This can be increased to as much as \$37,000 based on receptor and noise characteristics (see sidebar).
 - b) It must achieve IDOT’s noise reduction design goal (NRD), which is a noise reduction of at least 8 dB(A) for at least one benefited receptor.
 - c) It must be desired by a majority of benefited receptors. Viewpoints of those benefitted by the proposed abatement are collected once abatement is found feasible, cost effective, and meets the NRD goal.

If abatement is not considered feasible and reasonable, the noise abatement measure will likely not be implemented as part of the project.

Are noise abatement measures recommended?

Noise abatement was evaluated for CNEs of the seven impacted receptors. A noise barrier (a wall, a berm, or a combination of the two) would be the most feasible approach to abating noise impacts in this area. Walls were used for the analysis, as berms would require additional right-of-way acquisition. TNM 2.5 was used to perform the noise barrier feasibility and reasonability evaluation for the impacted receptors. Seven noise walls were evaluated for the seven impacted receptors.



Noise reductions achieved by the barrier, number of residences benefited, total cost, and total cost per residence benefited are all considered when determining if an abatement measure is feasible and reasonable.

Feasibility Evaluation: Three of the noise walls were constructible and achieved at least a 5 dB(A) reduction at an impacted receptor (CNEs for R1, R10, and R30). Noise walls at CNEs R2, R3, R4, and R12 did not achieve the 5 dB(A) reduction goal and were found not feasible; walls at R2, R3, R4, and R12 required gaps to maintain driveway access, which limited the noise walls' effectiveness.

Reasonableness Evaluation: Noise walls at R1, R10, and R30 were found feasible. A noise wall at CNE R10 would not achieve the noise reduction design goal of 8 dB(A) because the wall required gaps to maintain driveway access, which limited the noise wall's effectiveness. Walls at R1 and R30 would be considered acoustically reasonable because they achieve the IDOT noise reduction design goal of at least an 8 dB(A) traffic noise reduction at one or more benefited receptor locations. However, the walls at R1 and R30 are not economically reasonable. **Table 4.3.5-3** shows the wall cost per benefited receptor (displayed in blue) exceeds the allowable cost (displayed in red).

Table 4.3.5-3 Noise Wall Cost Evaluation

CNE	Benefited Receptors	Wall Length (feet)	Wall Height (feet)	Total Wall Cost*	Actual Cost per Benefited Receptor	Adjusted Allowable Cost per Benefited Receptor
R1	1	701	19	\$332,975	\$332,975	\$29,000 ¹
R30	1	736	20	\$368,000	\$368,000	\$34,000 ²

*Based on the IDOT noise wall unit cost of \$25 per square foot

¹ Base value of \$24,000 plus \$5,000 for receptor existing prior to ESH construction.

² Base value of \$24,000 plus \$4,000 for > 15 dB(A) increase in noise from existing to build condition, plus \$1,000 for build condition noise level of 71 dB(A), plus \$5,000 for receptor existing prior to ESH construction.

Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are not likely to be implemented based on preliminary design.

How will construction activities affect noise levels?

Trucks and machinery used for construction produce noise that may affect some land uses and activities during the

What mitigation measures will be used to minimize construction noise?

- All equipment used for hauling or construction will have an adequate muffler in constant operation.
- Construction within 1,000 feet of an occupied residence, motel, hospital, or similar receptor will occur only between 7 a.m. and 10 p.m.

Source: Illinois DOT Standard Specifications for Road and Bridge Construction, Article 107.35



construction period. Residents along the alignment will at some time experience construction noise. To reduce construction noise impacts, mitigation measures have been incorporated into the IDOT Standard Specifications for Road and Bridge Construction (see sidebar for examples).

How will the project affect noise levels for future planned development?

Potential noise levels for lands planned for future development are calculated using a contour analysis, where noise level contours are plotted on the future development areas (for land uses with an NAC). Local and regional plans are used to identify planned growth areas.

A review of local and regional plans in the ESH area showed various planned growth areas along the length of the ESH Preferred Alternative. The noise level at which a noise impact would be identified for the planned uses is 66 dB(A). Noise contours at 66 dB(A) were located along the corridor between 175 feet and 200 feet from centerline of the nearest ESH lane.

The results of the contour analysis were shared with the cities of Bloomington and Normal, as well as McLean County, so that potential ESH noise effects may be taken into account during site design for planned uses in the vicinity of the ESH.

4.3.6 Natural Resources

How will the Preferred Alternative affect vegetation and forests?

Non-paved areas within the proposed right-of-way would be converted to native grasses or other vegetation in accordance with maintenance and safety requirements (see **Section 4.3.7** for proposed Best Management Practices (BMPs)). **Table 4.3-1** summarizes the cover types within the Preferred Alternative right-of-way that would be converted. Approximately 80% of the Preferred Alternative right-of-way is under agricultural use, 19% is developed or urban land, and one percent represents riparian areas. Prairie, pond, and wetland areas combined comprise less than one percent of the Preferred Alternative right-of-way. The Preferred Alternative does not impact any forested areas. Approximately 4.4 acres of prairie (Site #3) will be impacted by the Preferred Alternative. Non-impacted prairie areas will be fenced off during construction to protect existing vegetation. No parking of vehicles or storage of equipment or materials shall occur in the prairies.

What measures are proposed to avoid or minimize impacts to wildlife and their habitat?

Most of the Preferred Alternative right-of-way area is currently agricultural, and for this reason there is limited wildlife habitat present. All forested land and most wetlands historically present in the area



have already been cleared or filled for agricultural activities. The Preferred Alternative impacts no forested areas and no wetlands. Since the Preferred Alternative does not impact any forested areas, potential impacts to migratory birds are minimized. For the trees that are removed, they will be replaced in accordance with IDOT D&E-18 policy.

Many reptiles and amphibians along with smaller mammals use river and stream corridors (riparian areas) for movement. The ESH will cross over 30 streams and tributaries that provide connectors for wildlife movement; however, the main stem of Money Creek, Six Mile Creek, Kickapoo Creek, and Little Kickapoo Creek were avoided to minimize impacts. Riparian areas are limited for the tributaries being crossed due to agriculture land use. The installation of natural bottom culverts or bridges maintains wildlife movement at these crossings. This design will be utilized for this project so that the roadway becomes less of a barrier and reduces potential vehicle/wildlife collisions.

How will construction activities affect wildlife and their habitat?

Wildlife could be affected by construction activities, such as stripping and clearing vegetation, grading, utility installation, moving heavy equipment, and sediment deposition in receiving waters. Larger mobile species (birds and large mammals) would generally avoid construction areas. These species can move from the construction area to surrounding habitats during construction. Some mortality is expected with slower-moving wildlife (e.g., young animals) or smaller, less mobile animals (e.g., small rodents, reptiles, and amphibians), as habitat is removed. Construction noise and activity, in certain instances, can prompt wildlife movement, disrupt travel patterns or behaviors, and result in additional wildlife impacts.

Amphibian species use aquatic areas for reproduction and other habitats for foraging and hibernation and often move from one habitat type to another. Reptiles also may use different habitats for hibernation, reproduction, and foraging. Reptiles and amphibians can be impacted by roads during seasonal migration, breeding, and nesting. Impacts to reptiles or amphibians in the project area would not eliminate or threaten the populations of these species in the state.

Project construction is anticipated to impact some species of neo-tropical migratory birds by impacting prairies. Migratory birds that require large tracts of forest for nesting and habitat are not anticipated to be affected as the alternatives do not impact forested areas.

What measures are proposed to avoid or minimize impacts to threatened and endangered species and their habitat?

Federal and state threatened and endangered species or habitat identified by INHS near or within the Preferred Alternative are listed below:



- The Loggerhead Shrike a state endangered species that has historically been observed adjacent to the study area. However, INHS did not observe the loggerhead shrike during the bird census. The potential habitat for this species within the alternatives is minimal (Johnson INHS, 2012).
- Upland Sandpiper: a state endangered species with the closest recorded location approximately four miles northeast of the study area. The potential habitat for these species within the Preferred Alternative is minimal.
- Indiana Bat and Northern Long-Eared Bats: Federal endangered species and federally threatened species, respectively. No Indiana Bats or Northern Long-Eared Bats were collected during mist net surveys for bats in the study area. There are no forested areas impacted by the Preferred Alternative, which is habitat required by the Indiana Bat and Northern Long-Eared Bats.
- Slippershell Mussel: During 2011 surveys, INHS collected one specimen of the Illinois threatened slippershell mussel from Money Creek. The Preferred Alternative does not cross Money Creek where the slippershell was collected, but is adjacent to a tributary of Money Creek, approximately 1.5 miles southwest and upstream of the slippershell collection site. Erosion control and water quality Best Management Practices (see **Section 4.3.7**) will be included as part of the Preferred Alternative to avoid or minimize indirect impacts to the slippershell mussel.

Although numerous threatened and endangered species of birds have been observed flying through the project area, none are known to nest in the project area. Construction activities would not impact listed bird species.

A Natural Resources Review (NRR) was conducted by the Illinois DOT Bureau of Design and Environment (BDE) on July 8, 2016 (see **Appendix D**). The NRR stated the following: “The Illinois Natural Heritage Database contains records of the Loggerhead Shrike and Slippershell mussel in the vicinity of the proposed improvement. Avian, mammal, fish, botanical, invertebrate water quality and mussel surveys were conducted by Illinois Natural History Survey in calendar year 2010. All surveys concluded absence of listed species. We conclude no adverse impacts to any state or federally listed species. Furthermore, there are no dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.” The NRR also stated the US Fish and Wildlife Service list of endangered, threatened, proposed and candidate species and proposed and designated critical habitat was reviewed and the preferred habitat of each species was cross referenced with the project area. It was determined that the proposed improvement is not likely to



jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of any critical habitat.

What cumulative or indirect impacts to natural resources could occur?

As planned development occurs, additional farm lands may be converted to urban uses. Farmland provides habitat for small mammals; no impacts are anticipated for state or Federal threatened and endangered species or local species as an abundance of this habitat will remain in place.

4.3.7 Water Resources

How would water resources be affected by the Preferred Alternative?

Pollutant contributions associated with runoff from roadway operations can affect the water quality of receiving streams. Particulates are a primary pollutant; however, heavy metals and organic matter are also associated with roadway operations. The following factors have a major influence on pollutant concentrations: traffic volume, atmospheric deposition (wet and dry) and site specific characteristics, such as land uses, highway surface, and highway maintenance. In addition, there are potential impacts associated with typical roadway construction activities, such as grading, filling, vegetation removal, and excavation. There may also be temporary disturbances caused by bridge, culvert, or roadway approach construction.

Water quality impacts associated with pollutants generated during construction, operation, or maintenance of the Preferred Alternative are described in this section.

How would construction activities of the Preferred Alternative affect water resources?

Construction impacts involve the clearing of vegetation, grading, and building of structures over, within, and adjacent to water resources. Impacts are the permanent loss of stream bottom and riparian habitat due to the placement of culverts and temporary disturbances due to an increase in sediment during construction. The greatest concern for water resources during construction is from potential siltation during the construction of bridges and box culverts at the stream crossings. The magnitude of the siltation impact will vary according to site specific conditions such as the type of crossing structure, bank profile, stream size, soil type, and stream substrate. Studies indicate without Best Management Practices (BMPs) in place, potential increases of five to 12 times more fine sediment suspended in streams impacted by road construction and increases in suspended sediment were detected up to 16 miles downstream. (Wheeler, et al., 2003)



Erosion control is an important factor in protecting water quality. Areas where highly erodible soils occur represent the greatest potential for soil loss. These areas occur primarily in the Kickapoo Creek watershed, adjacent to and south of Ireland Grove Road.

Although the main stems of Little Kickapoo Creek, Kickapoo Creek, Six Mile Creek, and Money Creek are avoided, there are 39 crossings of their tributaries. These crossing structures consist primarily of culverts due to the minimal size of these streams and tributaries. The small tributaries of Little Kickapoo Creek, Kickapoo Creek, Six Mile Creek, and Money Creek, crossed by the Preferred Alternative represent intermittent streams with drainage areas typically less than one square mile. Only eight crossings had an upstream drainage area greater than one square mile, and all were less than two square miles with the exception of an unnamed tributary to Kickapoo Creek, where a bridge is planned. The number of crossings is estimated by watershed in **Table 4.3.7-1**.

Aquatic life in these tributaries would be limited due to seasonal flow and available habitat. Construction impacts will have minimal effects upon aquatic life in these tributaries.

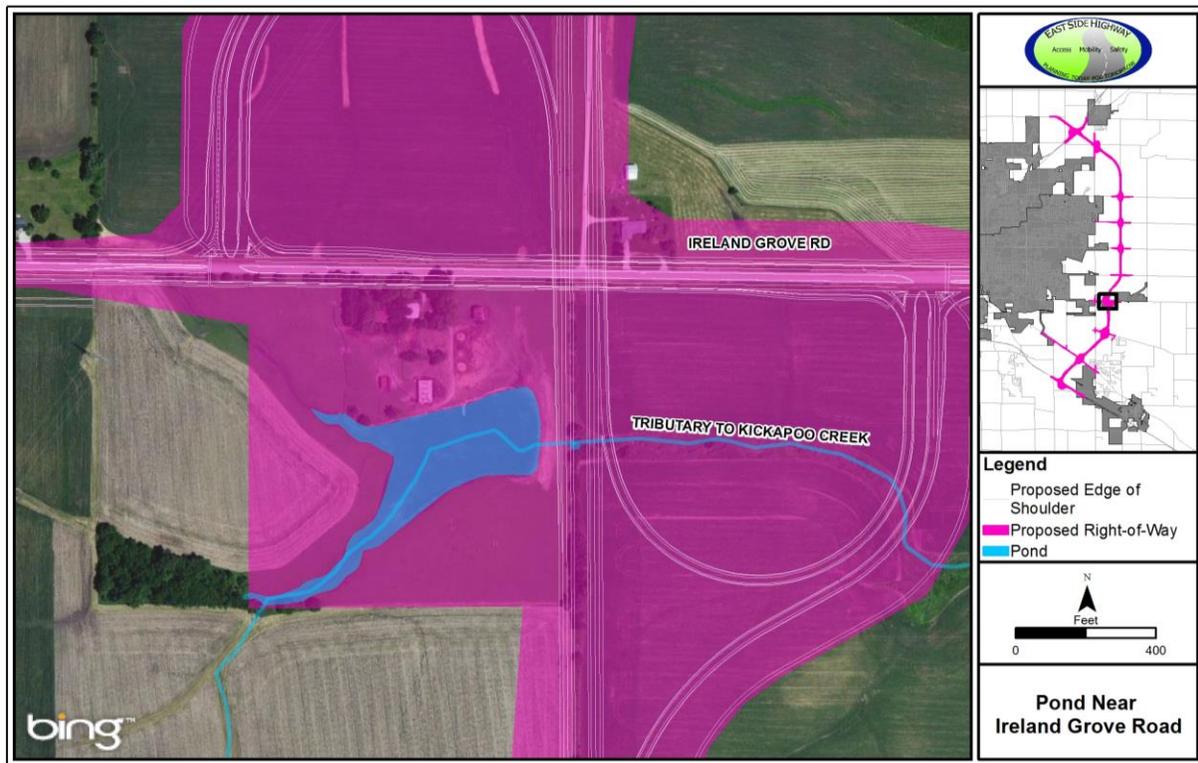
Table 4.3.7-1 Summary of Culvert Crossings for Preferred Alternative

Stream	Number of Crossings	Corp of Engineers Permit Required
Tributaries to Kickapoo Creek	17	Nationwide 404
Tributaries to Little Kickapoo Creek	10	Nationwide 404
Tributaries to Money Creek	8	Nationwide 404
Tributaries to Six Mile Creek	4	Nationwide 404
Total	39	



The construction of culverts would replace stream bottoms. Additionally, one unnamed tributary of Kickapoo Creek south of Ireland Grove Road (shown in **Figure 4.3.7-1**) is currently controlled by an earthen dam, which has created an impoundment used for livestock watering. To accommodate the Preferred Alternative, this dam will be removed and the stream area restored. Removal of the dam will result in improving stream flow in the tributary to Kickapoo Creek. This improvement may require an Individual 404 permit if greater than 0.5 acres are affected.

Figure 4.3.7-1 Pond Near Ireland Grove Road



The Preferred Alternative will not impact biologically significant streams and will not cross the main branch of any stream. There will be no impacts to Lake Bloomington or Evergreen Lake as a result of construction activities. These lakes are approximately 4.75 miles and 6.5 miles away, respectively, from the Preferred Alternative. Given these distances, no effects from sedimentation will occur.



How would construction impacts be minimized?

There are three practices that would be implemented to minimize construction impacts on water quality:

- 1) Implement IDOT erosion control measures
- 2) Utilize natural bottom culverts where fish passage is important
- 3) Staging construction

Mitigation measures identified in the IDOT *Standard Specifications for Road and Bridge Construction* (IDOT, 2012) and “Construction Memorandum No. 06-60, Erosion and Sediment Control” (IDOT, May 2006) would be used to reduce the effects of roadway construction.

Soil erosion control measures in these areas would involve special consideration to minimize sedimentation in the stream during construction. Construction on or near river and stream banks would be staged so that these areas could be re-vegetated immediately following construction. Raw (un-vegetated) banks would be mulched or protected with blankets until the vegetation is established.

To minimize the loss of stream bottom, natural bottom culverts are proposed in six locations as shown in **Figure 4.3.7-2**. Natural bottom culverts are designed to sufficiently submerge the bottom of the culvert to maintain passage for fish and aquatic insects.

Figure 4.3.7-2 Natural Bottom Culverts



A natural bottom culvert was installed to restore spawning access for brook trout in Beaver Creek of the Shavers Fork River in West Virginia (Photo provided by West Virginia Division of Natural Resources, 2011).



What are the operational impacts of the Preferred Alternative on water quality?

Operational impacts are those that occur after a roadway is open to traffic, including the effects of storm water runoff on adjacent water resources. The discussion of operational impacts is based on the following factors: 1) the quality of the receiving water; 2) the location of the receiving water in relationship to roadway features; 3) the current average daily traffic (ADT) on an existing route; and 4) the proposed (2035) ADT.

Pollutants in highway runoff are not present in amounts that threaten surface water or groundwater quality when the Average Daily Traffic (ADT) is less than 30,000 vpd (Driscoll et al. 1990). In addition, for roadways with ADTs between 30,000 and 50,000 vpd pollutant loading studies are only recommended if drainage is handled by storm sewers (IDOT, 2010). Since the predicted traffic volume in the year 2035 is less than the 30,000 vpd in most locations and below 50,000 vpd in all locations and BMPs will be utilized for storm water management, the water quality impacts on receiving waters from storm water runoff are minor.

Currently, Six Mile Creek is listed as impaired due to various causes including sedimentation and low dissolved oxygen. Sugar Creek is also listed on the 303 (d) list due to phosphorous and loss of stream cover. The Preferred Alternative will not contribute to dissolved oxygen deficiencies or phosphorus concentrations. Suspended solids from roadway operations will be minimized through the ditch and swale system, filter strips, and other Best Management Practices (BMPs). BMP design concepts are described in the ESH Aesthetics and Sustainability Master Plan, which will be included in the Combined Design Report.

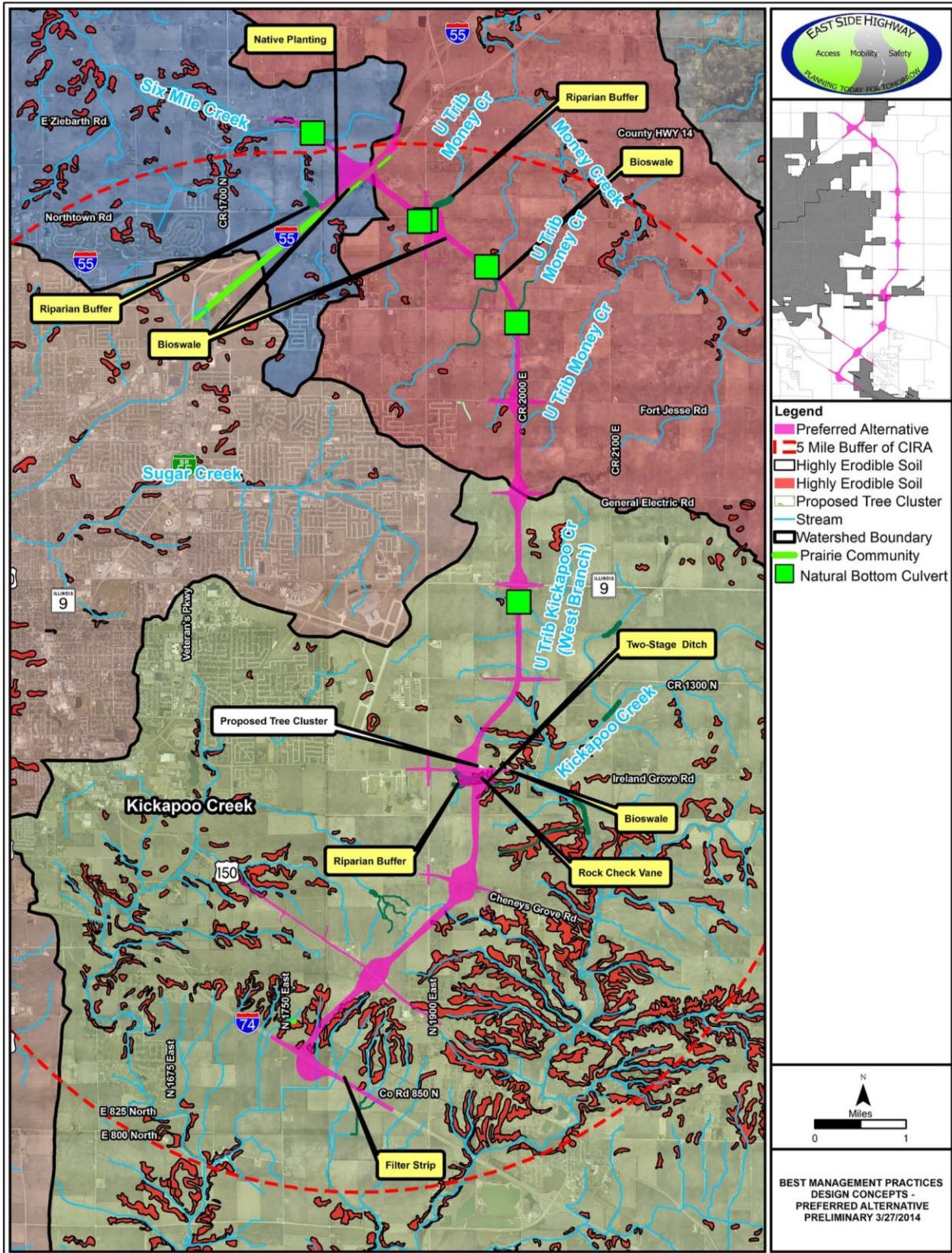
How are the Preferred Alternative operational impacts on water quality minimized?

A combination of (BMPs) for storm water management is proposed to reduce pollutant concentrations reaching the streams. Additionally, the implementation of BMPs must meet the FAA requirement to prevent wildlife hazards near the Central Illinois Regional Airport. FAA requires that standing water is removed within 48 hours, which limits wet detention basin usage. **Figure 4.3.7-3** depicts the area for which the FAA requirement applies, which takes in most of the project area.

For each BMP, a brief description of the drainage concept is provided below including its benefits to storm water quality. Proposed locations of BMPs are provided in **Figure 4.3.7-3**.



Figure 4.3.7-3 Proposed BMPs



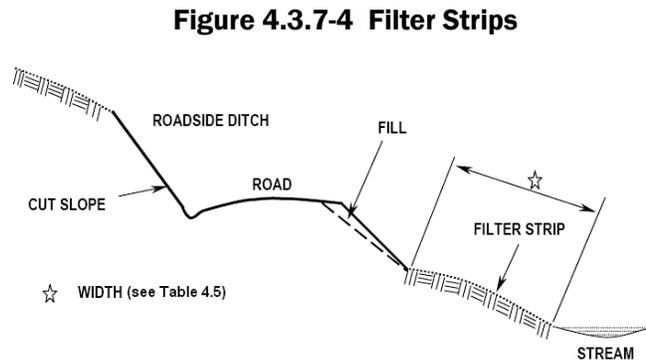
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Filter Strips

Filter or vegetative strips receive runoff from storm sewers or ditches prior to discharge to a stream. They are designed to reduce velocities and filter runoff, with a portion of the runoff infiltrating into the soil.

Storm water collected in ditches or storm sewers discharge to a filter strip prior to reaching the stream. The filter strip typically extends 100 to 200 feet in length to reduce storm water velocity prior to discharge to streams. In addition, sediment in runoff is reduced and runoff volumes are distributed evenly into nearby streams.



Schematic of filter near road (photo provided by Commonwealth of Pennsylvania, Department of Environmental Protection 5500-FM-OG0111 Rev. 12/2009)

Natural Bottom Culverts

Natural bottom culverts (See **Figure 4.3.7-2**) are recommended in sensitive stream locations. Natural bottom culverts may be four-sided culverts that are partially buried in water to allow for fish passage and preserve the natural streambed or three-sided culverts. They are designed to maintain low flow through the culvert in order to support fish passage and preserve the natural streambed. For channel crossings located within Waters of the U.S. (and under the jurisdiction of the U.S. Army Corps of Engineers) the proposed culverts will be buried in accordance with IDOT specifications of three inches below the stream bed to allow for fish passage. In order to meet hydraulic requirements, the buried portion will be in addition to the required culvert size.

Riparian Buffers

Riparian buffers are vegetation along or near the stream bank that slows stormwater runoff velocities and allows for sediment and pollutant sediment. Existing riparian areas within the project corridor are few in number due to agricultural land use and recent land development. The areas adjacent to Money Creek tributaries and Kickapoo Creek tributaries have existing areas consisting of grasses, trees, and herbaceous vegetation. Riparian areas will be restored to reduce soil erosion and provide habitat.



Figure 4.3.7-5 Riparian Buffer

*Riparian buffers along stream bank
(Photo provided by NRCS-Iowa, USDA)*

Bioswales/Vegetated Swales

Bioswales are densely vegetated drainage ways with permeable soils that collect and slowly convey runoff. The design of the longitudinal slope and cross-section size forces the flow to be slow and shallow, thereby facilitating sedimentation and infiltration while limiting erosion and increasing pollutant removal. As wet detention basins cannot be utilized due to the FAA restriction on standing water, the bioswales provide an option for improved pollutant removal at key environmentally sensitive locations near Kickapoo Creek and Money Creek. See **Figure 4.3.7-3** for location details.

Tree Clusters and Native Plantings

Tree clusters are considered for screening as part of 1:1 tree replacement that will occur in the project corridor. In addition, native plantings aid in increasing water infiltration in the soil and water evapotranspiration.

Native plants are vegetation that grows naturally in particular climates or regions. Native plantings are recommended in bioswales and prairie restoration along Interstate 55.



*Bioswale along Tri-State Tollway Interstate 294 in Illinois
(Photo by Erin Kocourek)*

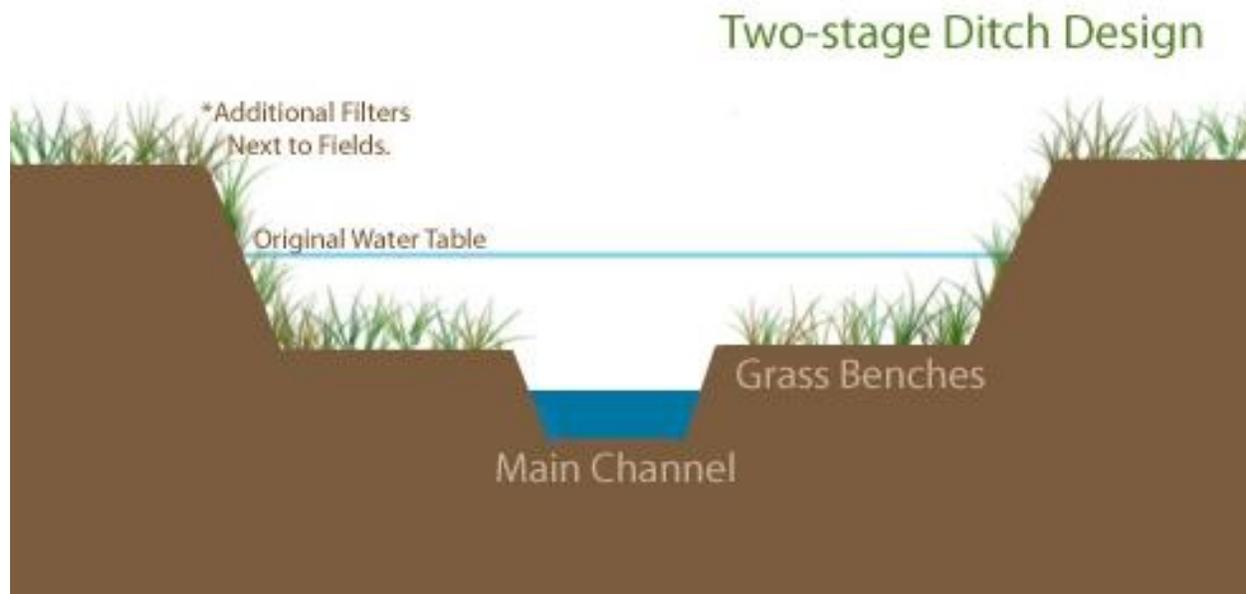


Two-Stage Ditch

Two-stage ditches are designed with a two-tier approach, known as benches, which slows down the velocity of water and allow for settling of sediment on the banks of the ditch. Two-stage ditches are BMPs which function to improve drainage by reducing runoff volume during peak storm events, improving water quality through retention, and preventing erosion.

Removing the dam south of Ireland Grove Road will improve the ecology and hydrology of the Kickapoo Creek tributary. Stream restoration is recommended after the dam is removed. A two-stage ditch could be used in the interchange area and this would be consistent with The Grove mitigation design for other sections of the west tributary to Kickapoo Creek.

Figure 4.3.7-6 Two-Stage Ditch



What are the maintenance impacts associated with the Preferred Alternative?

Maintenance impacts of the ESH include the use of deicing salt for snow and ice control and herbicide usage for control of noxious/invasive plant species. Existing chloride concentrations in the project streams varied from 12.7 mg/L in Kickapoo Creek to 201 mg/L in Little Kickapoo Creek. Chlorides are found in all natural waters. Sources of chlorides include those of natural mineral origin, human and animal wastes, and industrial effluents. The chloride content of various waters of interest in parts per million (ppm) are approximately as follows: rain water (2 mg/L), unpolluted river water (up to 15 mg/L), and weak sewage (70 mg/L).



Deicing salt is applied to roadways to lower the freezing point of water and to free the snow and ice from the pavement. Most of the salt is plowed along with snow and ice to the shoulder and adjacent right-of-way. The deicing salt then moves through the environment as runoff, splash, and spray, moving through the drainage system until it enters a stream as runoff, or percolates into the soil profile. Salt also is transported via the splash or spray generated by moving vehicles coming into contact with brine or slush. Studies indicate that 60 to 80 percent of the salt runs off into the surface water, 15 to 35 percent occurs as splash, and up to 3 percent occurs as spray (Frost, et al, 1981; Diment, et al, 1973; Lipka and Aulenback, 1976; Sucoff, 1975). Chloride infiltration is estimated at 25 to 60 percent depending upon the roadway drainage design and site characteristics (McConnell and Lewis, 1972; Environment Canada, 2001).

Surface runoff is the primary mode of road salt removal (60 to 80 percent). Runoff from the roadway and adjacent right-of-way would be directed to the highway drainage system (a series of ditches and detention basins) before draining into a stream. The potential impacts of deicing salt from highway runoff include its effects on stream water quality and aquatic biota.

Salt impacts on soils are usually confined to 15 feet from the roadway. Long-term salt accumulation in the soil increases soil density and diminishes permeability and fertility, which could adversely affect moisture retention and soil structure characteristics that are important for plant growth and erosion control. The accumulation of salt in soils depends on many factors, including soil type, precipitation, and topography (Transportation Research Board, 1991).

In Illinois, the General Use Water Quality Standard for chloride is 500 mg/L, as per 35 Illinois Administrative Code Section 302. Chloride concentrations in Six Mile Creek, Money Creek, Little Kickapoo Creek, and Kickapoo Creek will achieve the General Use Water Quality standard.

How is IDOT minimizing maintenance impacts?

Deicing applications represent the primary activity that affects water quality in the area streams. The application rates need to be sufficient to maintain safe roadways; however, IDOT is continuing to develop additional management and maintenance strategies to reduce deicing application rates. The following strategies would be incorporated into the maintenance program:

- Public education and employee training
- Proper storage and handling operations (e.g., perform on impervious surfaces, completely cover salt piles, control stormwater runoff)
- Use of digitally calibrated spreaders to minimize over-application



- Routing calibration (at least twice a year)
- Timing of application
- Weather information and forecasting using Road Weather Information Systems (RWIS) and Maintenance Decision Support Systems (MDSS)
- Passive snow control with the use of snow fences
- Plowing and snow removal



4.3.8 Groundwater

How does the Preferred Alternative affect groundwater resources?

The Preferred Alternative will not affect the public water supplies of Bloomington or Normal. Other uses of groundwater near the Preferred Alternative included private wells, non-community water supplies, and wellhead protection areas.

The Illinois Groundwater Protection Act (Chapter 415 *Illinois Compiled Statutes Section 55*) establishes setback zones for the location of pollution sources such as stockpiles of deicing chemicals. Setback zones will be considered in the siting of maintenance facilities in the proposed project.

This project will not create any new potential routes for groundwater pollution or any new potential sources of groundwater pollution as defined in the Illinois Environmental Protection Act (*415 ILCS 5/3, et seq.*). Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in *415 ILCS 5/14 et seq.*

The Preferred Alternative will remove one private well that would be located within the proposed right-of-way. This well is associated with the removal of one residence and will be properly abandoned in accordance with Illinois Department of Public Health code. An additional seven wells are located within 200 feet of the Preferred Alternative right-of-way and extend to depths of 130 to 270 feet. Wells within 200 feet of the roadway that are shallow, improperly cased, or directly hydraulically connected could be potentially affected. For these wells there is the possibility of increased chlorides in the groundwater. The increase in chloride concentrations in shallow aquifers may be attributed primarily to road salt runoff. To minimize increased chlorides in areas where there are shallow wells, the base of the ditch system can be designed to remain above the shallow water table. In addition, the ditch system near shallow wells can also be lined with clay to reduce any possible infiltration to the shallow groundwater table. However, none of the wells within 200 feet of the preferred alternative are shallow and clay lined ditches will not be needed.

How is the Mahomet Sole Source Aquifer affected by the Preferred Alternative?

On March 11, 2015 the U.S. Environmental Protection Agency (USEPA) designated the Mahomet Aquifer as a sole source aquifer (SSA) under Section 1424(e) of the Safe Drinking Water Act. The Mahomet Aquifer is located in parts of 15 Illinois counties, including parts of McLean County and areas that drain into the aquifer (See **Figure 3.8-1**). The Safe Drinking Water Act gives USEPA



authority to designate all or part of an aquifer as a "sole source" if contamination of the aquifer would create a significant hazard to public health and there are no physically available or economically feasible alternative sources of drinking water to serve the population that relies on the aquifer. The designation authorizes the USEPA review of projects that receive Federal financial assistance to assess potential for contamination of the aquifer system that would create a significant hazard to public health.

The only portion of the study area that lies within the Mahomet SSA Review Area is the proposed bike path along GE Road. No portion of the proposed roadway would extend into the designated Mahomet Sole Source Aquifer or its larger review area. The bike path would introduce approximately 82,800 SF of impervious surface into the review area and zero SF into the Mahomet Sole Source Aquifer. This represents a very small fraction (0.0000007%) of the Mahomet Sole Source Aquifer and its review area.

This project does not have the potential to result in contamination of the Aquifer so as to create a significant hazard to public health for the following reasons: 1) the small size of the bike path area within the SSA review area, 2) implementation of best management practices (BMPs) during construction and landscape BMPs following construction, and 3) no deicing materials are expected to be used on the bike path.

How will the Preferred Alternative affect wellhead protection areas?

Wellhead protection areas are identified by the IEPA as community or non-community water supplies. There are four non-community wellhead protection areas crossed by the Preferred Alternative, in addition to two community wellhead protection areas, for a total of six protection areas,. The two community wellhead protection areas occur near the interchange of the Preferred Alternative and U.S. 150. Two of the four non-community wellhead protection areas are also located at this same interchange. The other two non-community wellhead protection areas are located at Fort Jesse Road and at Towanda Barnes Road/East Raab Road. These wellhead protection areas were established to protect groundwater supplies as described in **Section 3.8**.

The quantity and quality of groundwater will not be affected by the Preferred Alternative. A slight reduction in recharge areas will be caused by the road pavement; however, the effect will not be measureable for private wells or wellhead protection areas.



4.3.9 Floodplains

What are the floodplain impacts for the Preferred Alternative?

The Preferred Alternative impacts 0.008 acres of flood fringe associated with a transverse crossing of a tributary of Money Creek. The floodplain impacts for the Preferred Alternative are identical to the impacts associated with the original Alternative 127 in **Chapter 3.9**. For more information see this section.

How were impacts to the floodplains avoided and minimized?

Compensatory Storage

Compensatory storage is a method of mitigating impacts to the floodplain. When the floodplain is filled by the construction of a road, another area nearby must be excavated in order to offset the loss of flood storage capacity. This excavated volume is the compensatory storage.

IDOT policy is to restore and preserve the natural and beneficial floodplain values that are adversely impacted by the construction or roadways. This is accomplished through mitigation. Where fill within floodplains is unavoidable, mitigation such as compensatory storage will be provided to offset the impact to the floodplain. Mitigation for fill in the floodplain will be based upon IL Administrative Code Title 17 Part 3700, 8/20/10.



4.3.10 Wetlands

How many acres and what types of wetlands will be impacted by the Preferred Alternative?

The wetland impacts for the Preferred Alternative are shown in **Table 4.3.10-1**; the Preferred Alternative impacts a total area of 0 acres of wetlands. There is one wetland, Site 30 an emergent marsh with an FQI of 8.7, which will have 0.08 acres within the right-of-way for the Preferred Alternative. This wetland will not be impacted because it is already in the existing US Route 66 right-of-way and the construction limits of the Preferred Alternative do not touch the wetland.

The Preferred Alternative will not impact any high quality wetlands.

Table 4.3.10-1: Wetland Impacts for Preferred Alternative

Alternative	Number of Wetlands Impacted	Acreage of Impacts to Wetlands	Total Area of Wetland Impact (acres)
Preferred Alternative	0	0	0

Source: *Beas et. al., 2012.*

The assessment of the original Alternative 127 in **Chapter 3** showed that it would impact 0.0003 acres of only one wetland, Site 31, a forested wetland (with an FQI of 11.1) located north of I-55. The Preferred Alternative footprint was then refined, and no longer impacted Site 31.

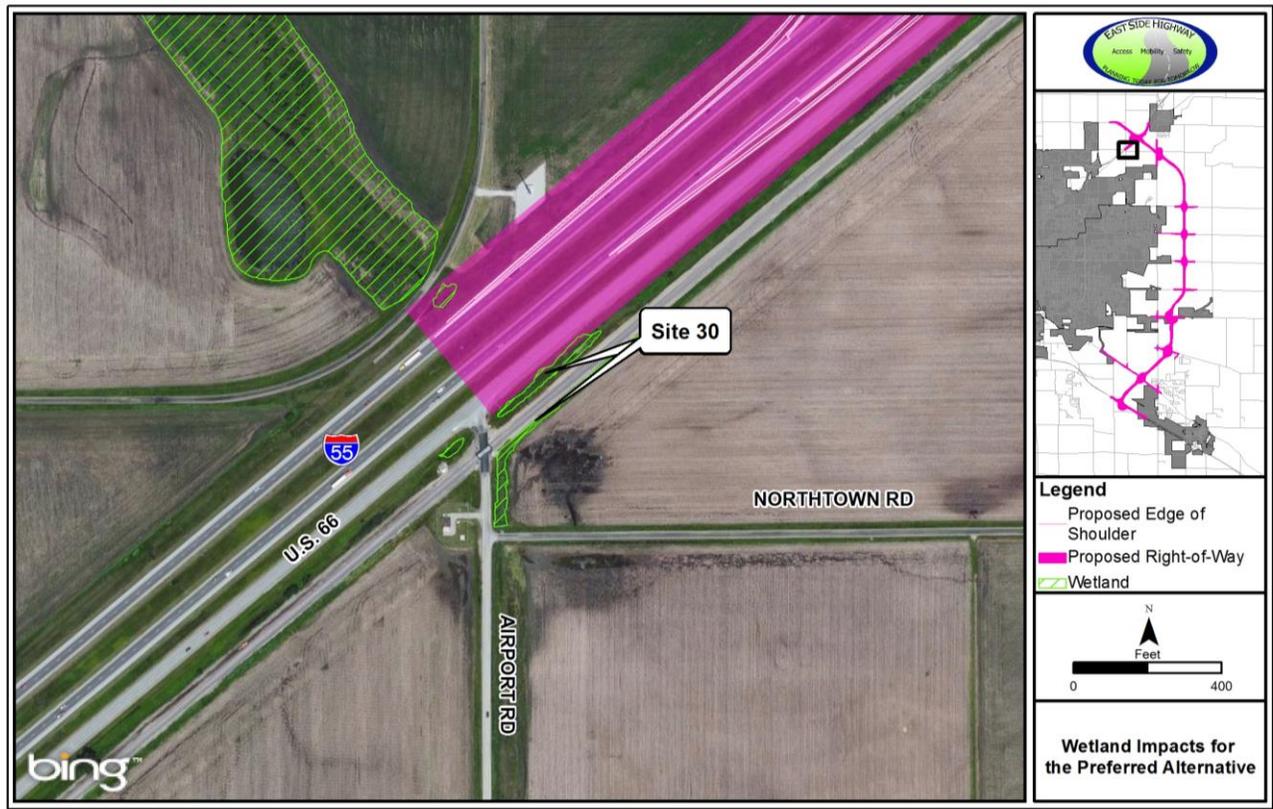
Figure 4.3.10-1 illustrates the emergent wetland site that will be in the right-of-way of the Preferred Alternative but will not be impacted by the construction limits.

Emergent Wetlands

Areas dominated by grasses, sedges, rushes and other perennial or annual herbaceous plants where hydric soils are present and water is at or near the soil surface.



Figure 4.3.10-1 Wetland Impacts for the Preferred Alternative



What design measures are proposed to avoid or minimize impacts to wetlands?

Refinements to the Preferred Alternative design may reduce the area of wetland impacts. Design and construction measures that are used to avoid and minimize wetland impacts include slightly shifting the location of the roadway, use of retaining walls and steeper side slopes, and bridging wetland areas.

What cumulative or indirect impacts to wetlands may occur?

All wetlands are avoided by the construction limits of the Preferred Alternative. The planned Illinois High-Speed Rail (HSR) project at the US Route 66 and Airport Road intersection would result in impacts to wetland Site 30. The HSR project will enhance the passenger transportation network within the Chicago to St. Louis corridor, resulting in a more balanced use of the modal components (IDOT). The Illinois HSR project is planned to improve the existing Union Pacific Railroad line parallel to accommodate high-speed trains. In addition to the main track improvements, the HSR improvements at the Airport Road intersection are anticipated to include railroad sidings and intersection improvements. This intersection is included in the Federal Railroad Administration's (FRA's) NEPA documentation for HSR complex rail crossings in IDOT District 5.

How will construction activities affect wetlands?

Wetlands and their functions that occur within the Preferred Alternative right-of-way can be destroyed by earth moving activities such as vegetation removal, draining, and the placement of roadbed materials within the wetland. Construction activities could temporarily or permanently impact wetlands within the project footprint. Temporary effects can result in a short term loss of wetland functions during construction and for up to five years following construction. Temporary impacts are not expected to result in permanent loss of wetlands. Temporarily impacted wetlands will be re-vegetated and wetland hydrology reestablished after construction is completed.

Temporary Impacts

Temporary impacts are typically created by grading of side slopes, recreating driveway access, building and reconstruction of waterway crossings, construction equipment access and underground utility relocation.

What measures are proposed to avoid or minimize impacts to wetlands during construction?

All practical measures will be used to reduce impacts to wetlands during construction. IDOT will protect and preserve wetlands within the project through various ways. The most important way is to identify wetland areas for the construction workers to prevent them from accidentally entering a site with equipment. This can be accomplished by fencing off wetlands that are not proposed to be impacted. In addition, wetland areas will be illustrated on plan sheets the construction contractors use in the field.



How will mitigation for wetland loss be determined?

Table 4.3.10-2: Interagency Wetland Policy Act Mitigation Ratios

Degree of Adverse Impact	Location of the Replacement Wetland		
	On-Site	Off-Site	Out-of-Basin
Minimal Alteration	1.0:1	1.5:1	2.0:1
	1.5:1		
Significant Alteration	1.5:1	2.0:1	3.0:1
Destruction	2.5:1	4.0:1	5.5:1

Source: 20 ILCS 830, 1989.

Mitigation or replacement for wetland impacts from the Preferred Alternative will follow the Interagency Wetland Policy Act of 1989 (IWPA) and Section 404 of the Clean Water Act. In keeping with the “no net loss” policy, the IWPA requires replacement wetlands to be created for all impacts to wetlands regardless of size. The IWPA includes a set of pre-described replacement ratios which must be followed (see **Table 4.3.10-2**). At a minimum, every acre of disturbed wetland must be replaced. Typical replacement ratios are 1.5 acres of new wetland creation for every one acre impacted. Since this project is on new alignment the minimum alternation ratios do not apply and a 2.0:1 ratio of new wetland creation for every one acre impacted will be used.

What mitigation is needed to compensate for wetland loss?

Due to the construction limits avoiding any wetland sites no wetland mitigation is expected for the Preferred Alternative.

Where will wetland mitigation occur?

For the ESH project, it is anticipated that no wetland mitigation will be required. If mitigation is required it will occur at a certified wetland bank, which is owned and operated by IDOT and approved by the U.S. Army Corps of Engineers (USACE). This project is located within the Morris Wetland Bank’s service area. A wetland bank is a location where wetland restoration, creation, and/or enhancement is undertaken for the purpose of compensating for unavoidable wetland losses in advance of development actions. Wetland banks can provide the required replacement of impacted wetlands when the creation of new wetlands is not practicable in or near the project.



4.3.11 Special Waste

How are REC sites impacted by the Preferred Alternative?

The Preferred Alternative impacts 29 sites with RECs. The Environmental Inventory Map (included in **Appendix A**) depicts the sites that contain RECs and are potentially affected by the Preferred Alternative. These sites include Resource Conservation and Recovery Act (RCRA) generators, above-ground storage tanks (ASTs), underground storage tanks (USTs), Illinois Emergency Management Agency (IMEA) sites, spills, railroad signal boxes, evidence of chemical uses, drums, vent pipes, fill, and other sites identified by the Bureau of Land (BOL) which is a division of the Illinois Environmental Protection Agency (IEPA).

Recognized Environmental Condition (REC)

Defined by ASTM E 1527-05 as “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.”

What measures are proposed to minimize or resolve effects to special waste sites?

All efforts have been made to avoid special waste sites, but there is no alternative that avoids all of them. Once the nature and extent of involvement are known and the areas of contamination are determined, those soils found to be contaminated will be managed and disposed of in accordance with applicable federal and state laws and regulations and in a manner that will protect human health and the environment.

An updated Preliminary Environmental Site Assessment (PESA) for the Preferred Alternative was completed for this project on November 24, 2014 (see Appendix D for the November 26, 2014 cover memorandum for the PESA). See **Section 3.11** for the results of the previous PESAs. It is the responsibility of Phase II engineers to determine if any of the sites or right-of-way adjacent to the site will be impacted with the proposed work and/or if any right-of-way will be required at any of the locations.

4.3.12 Visual Resources

Are there high quality visual resources in the Preferred Alternative project area?

Duncan Manor, a NRHP historical site, is located in the study area and near the Preferred Alternative. The site is located 240 feet from the Preferred Alternative. As such, the Preferred



Alternative would be visible from Duncan Manor and Duncan Manor would be visible from the Preferred Alternative. However, Duncan Manor has an existing view of I-55 and can be seen from I-55, so the Preferred Alternative would not significantly alter the visual character of the area.

No views of high quality wetlands, parks, or other natural areas will be affected by the project.

What will be the views from the Preferred Alternative?

Visual impacts are subjective and determined by the preferences of viewers. However, views from the ESH will predominately be of rural landscapes, as the Preferred Alternative travels to the east of Bloomington-Normal.

What will be the views of the Preferred Alternative?

The ESH will be visible to the surrounding area, especially in areas where interchanges will require elevated structures. Elevated structures are anticipated at the interchanges with I-74, US 150, Cheney's Grove Road, Ireland Grove Road, Empire Street (IL Route 9), General Electric Road, Fort Jesse Road, Towanda Barnes Road, and I-55.

Residents in rural areas near the right-of-way of the alternatives will have changed views, as a roadway will be introduced where one did not previously exist.

What efforts will be undertaken to mitigate potential visual impacts?

Visual impacts will be mitigated through the planting of trees near the proposed interchange with Ireland Grove Road and through native plant installation near the I-55 interchange. Tree clusters and native plantings are discussed further in the ESH Aesthetics and Sustainability Master Plan, which will be included in the Combined Design Report.

How will the ESH area look during construction?

Road construction will have temporary visual effects. Large construction equipment, construction materials, and piles of earth or other materials may be present at and adjacent to the new roadway during construction. There may be areas used temporarily for construction staging, but these will be restored to their original condition when construction is complete.



4.4 Permits

What permits or certifications are necessary for the approval of the Preferred Alternative?

The following is a summarization of the permits and certifications applicable to the ESH project. Regulatory permits would be required for the implementation of an alternative.

Permits for the proposed project could include at least the following:

- Section 404 of the Clean Water Act (CWA) from the USACE - a Nationwide Permit will be required for jurisdictional wetland and Waters of the United States impacts.
- Section 401 of the CWA Water Quality Certification (WQC) from the Illinois Environmental Protection Agency (IEPA).
- National Pollutant Discharge Elimination System (NPDES) permit from the IEPA – required for stormwater discharges from the construction site.
- Illinois Department of Natural Resources (IDNR) – Office of Water Resources (OWR) permits for impacts to regulatory floodways and stream crossings - required for work within regulatory floodways and for the crossing of streams with more than 640 acres of drainage area for urban areas.
- It is anticipated this project will result in the disturbance of one or more acres (4,047 m² or more) of total land area. Accordingly, it is subject to the requirement for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage for the project will be obtained either under the IEPA Activities (NPDES Permit No. ILR10) or under an individual NPDES permit. Requirements applicable to such a permit will be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges from the construction site and shall describe and ensure the implementation of practices which will be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.

As the project is state sponsored, the project must comply with the Interagency Wetland Policy Act of 1989 (IWPA). Under the IWPA, all impacts to wetlands regardless of size must be mitigated within the affected drainage basin or within one mile of the proposed project limits.

